

Flight, April 6, 1912.

FLIGHT

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

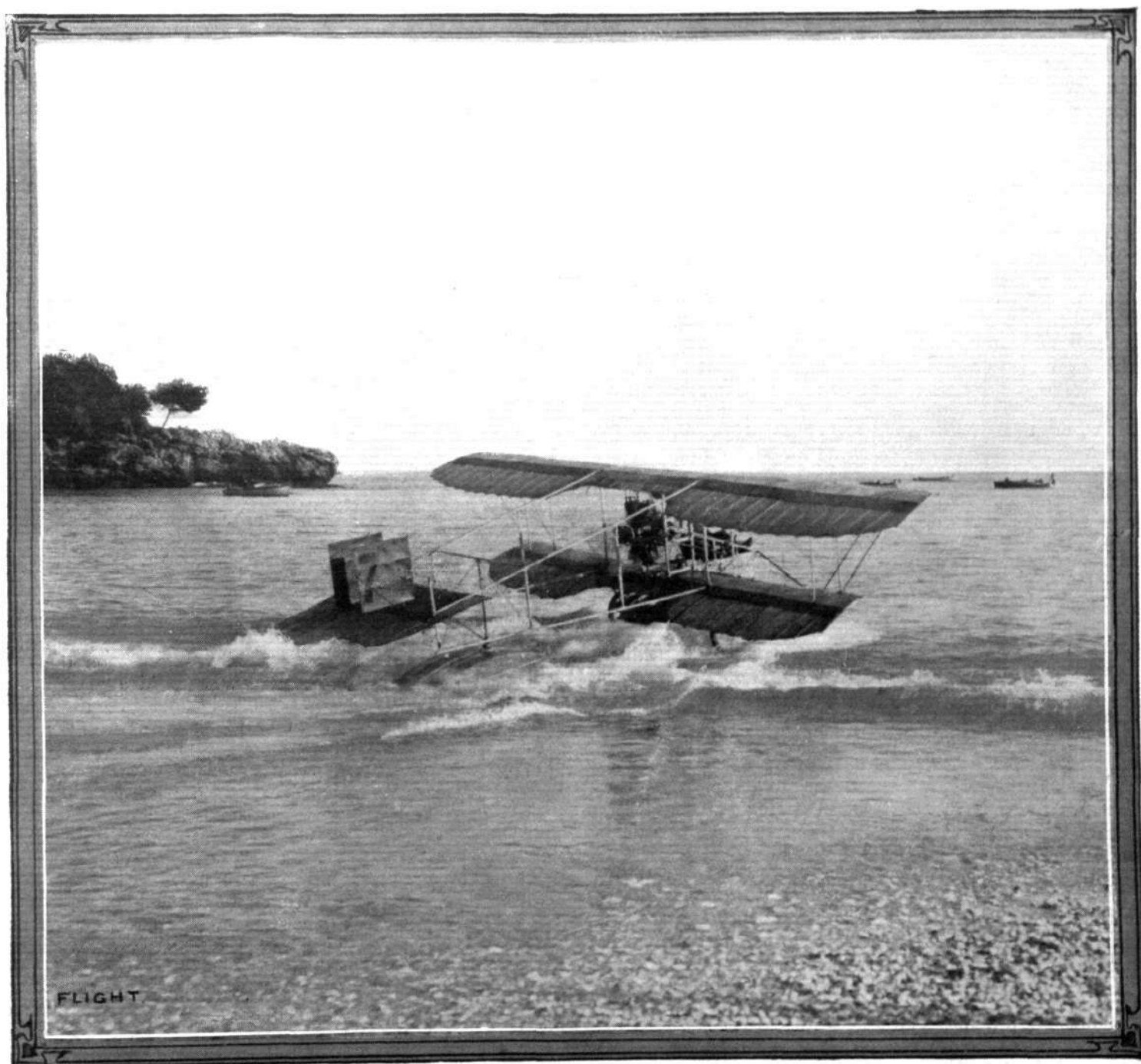
OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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APRIL 6, 1912.

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A hydro-aeroplane—the Caudron—taking off from the shore in one of the tests at Monaco.

EDITORIAL COMMENT.

The Competition Rules of the R.Ae.C.

The Royal Aero Club has just issued the new series of competition rules, which was passed by the Executive Committee on the 19th ult. The rules are based upon the Open Competition rules of the R.A.C. with the necessary emendations to bring them into line with the necessities of flying competitions. They appear to us to be excellent alike in their draughtsmanship and in their clarity of wording—in fact we cannot help feeling a little surprised that at what is, after all, a very early stage in the history of flight the Club has been able to elaborate so complete and excellent a code of rules for the government of every conceivable kind of competition in which aircraft of any type can engage. We congratulate the Club on the manner in which it has carried out this latest work to which it has set its hand.

The Problem of the Dirigible.

We do not count ourselves among the rabid adherents to the principle of the dirigible balloon, believing, as we do, that the main development of man-flight must be along the lines of the heavier-than-air machine. That, we think, has been made sufficiently clear by what we have written in past issues of *FLIGHT* when dealing with the comparative problem of dirigible *versus* aeroplane. But the holding of such opinions as we have from time to time expressed need not imply that we are not believers in the future of the air-craft which depends upon a gas-filled vessel for its lifting capacity, nor that in considering problems of aerial defence the dirigible should be underrated. In point of fact, we have always urged that while the first essentials of our own case made it imperative that aeroplanes should form the first line of defence and that the authorities should concentrate the major part of their energies on providing an efficient fleet of these wasps of the air, a careful eye should be kept on developments made in the older and larger type of air-craft. We have admittedly lagged behind other Great Powers in developing our aerial resources and there is much lost ground to be made up and, logically, we must, for the time being, concentrate on the aeroplane. At one time it looked as though the story of the dirigible was to be that of utter failure. In Germany, in France and at home, disaster after disaster overtook these huge craft until even those who were carefully watching developments might have been pardoned for arriving at an absolutely definite conclusion adverse to the type. It does not answer, however, to be too certain of anything in this life, and this lesson looks like receiving yet another illustration in the case of the development of the lighter-than-air flying machine.

It is extremely difficult to obtain authoritative news of the results of experiments conducted by foreign armies, especially that of Germany, but all we hear points to very rapid development of the type of craft we are discussing. This we do know definitely, that Germany is adding very largely to her dirigible fleet, and with the knowledge that the German Army is not in the habit of putting its money on the wrong horse seems to us to make out a very good case for close study. We believe that our own authorities are fully awake to the situation, so we do not presume to counsel the immediate laying down of a number of dirigibles. Rather should they continue to concentrate upon bringing the aeroplane fleet into a state of absolute efficiency, for that is our first necessity,

while at the same time continuing the small-scale experiments which they have already been carrying out, carefully watching at the same time every development of the larger craft. We do not believe that even the Germans have successfully solved all the problems of the dirigible, but they have certainly improved the type out of all knowledge, and who knows what further developments may even now be taking place?

France, too, is following the lead, and contracts are under consideration for the building of several large dirigibles to carry useful loads of from eight to ten tons and with an effective speed of forty miles an hour. Assuming that these vessels are not to be constructed simply for the sake of effect, we are forced to the conclusion that more is known on the Continent of the immediate possibilities of these craft than has yet been learnt on this side of the Channel, the insistent moral being that we, too, must strain every nerve to keep abreast of our rivals. Whether the aeroplane will be found in actual war to be capable of accounting for the detached dirigible cannot be demonstrated until the actual shock comes, but we imagine that the primary function of the large craft in war will be that of the mine-layer at sea, protected by the mosquito fleet, in which case it would seem that the best defence against them is the possession of an overwhelming superiority in aeroplanes to account first for the protecting escort and then to deal with the dirigible itself. Thus there may be no need, having regard to our own situation, to go in for a huge fleet of dirigibles, but at least we must place ourselves on a footing of unquestioned defensive supremacy in aeroplanes. But these are considerations of a strategical and tactical nature upon which it is scarcely our province to enlarge. Attention to what is happening abroad is the thing to bear in mind and such warnings as they give be taken to heart.

Mr. Grahame-White's Campaign.

Since we discussed Mr. Grahame-White's projected campaign for awakening the country to its aerial necessities, he has somewhat amplified his first outlines of the scheme. To commence with, he is making a good beginning by holding what is practically an aerial race-meeting on Brooklands lines during the Easter holidays, details of which we have already published. That will serve to call fresh attention to what we may call general progress and thus help to focus public attention on the subject at large. Then he projects to hold a weekly meeting in London, while an organised campaign is to be embarked upon in every town of the kingdom with the object of educating the people to the enormous potentialities of air-craft as a means of offence and defence. The programme is excellent in that it certainly makes for the strengthening of public opinion and it is the *vox populi* which moves Governments. At the same time we are inclined to think that he debits the Government with rather less appreciation of the needs of the moment than is its due. We, ourselves, incline to the opinion that our authorities of State are fully alive to what is wanted and that they will rather welcome any movement which will strengthen their hands. After all, nothing can be done without money and before Parliament can be induced to vote the necessary sums for development, it—which is the nation—must be fully convinced of the necessity and desirability of spending what it is asked to vote.

AVIATION IN AUSTRALIA AND PIONEERS.

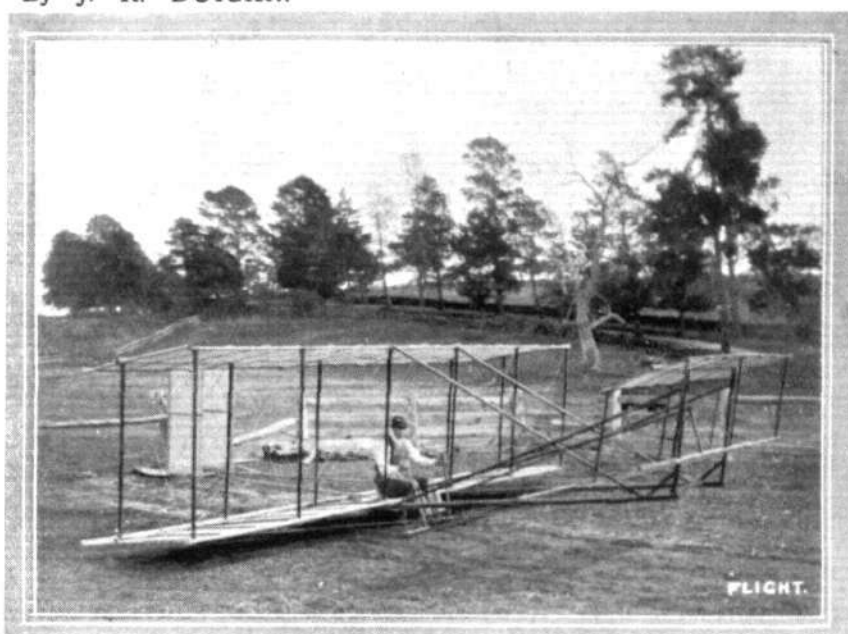
By J. R. DUIGAN.

I WAS very interested to see in FLIGHT of March 16th an article on "Aviation in Australia and Pioneers," and as the subject is evidently of interest I am sending you a brief account with photos of my own early efforts.

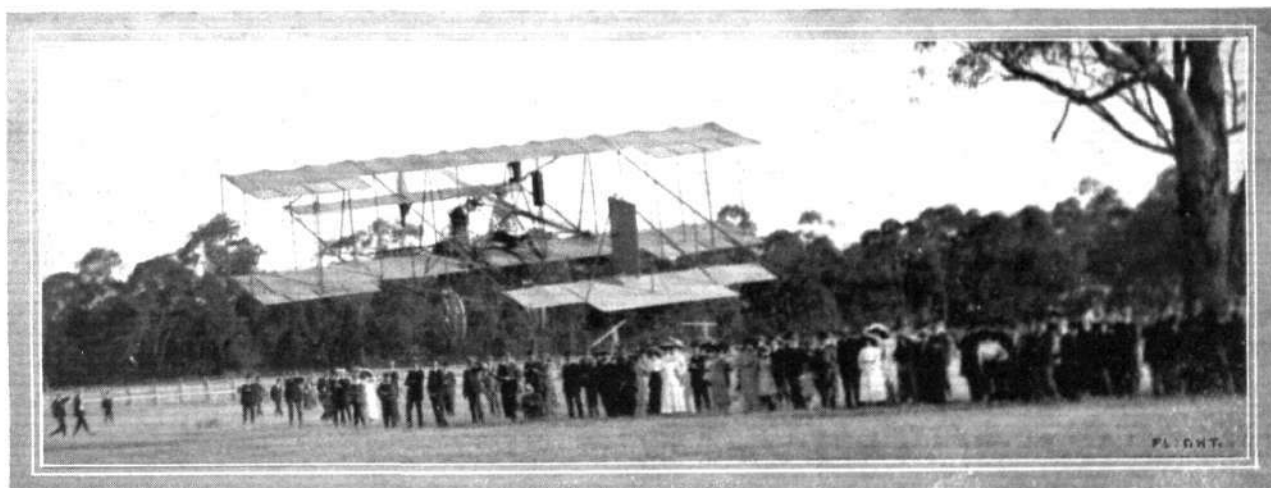
1st attempt, 1909. A pair of wings only. Result, not a success.

2nd effort, early 1910. 1/2-size Wright glider (Photo enclosed). Flown in strong winds, anchored to 120 yards of fencing wire. Left ground successfully and rose 4 or 5 ft.

3rd effort. This machine was commenced beginning of 1910, and was on Farman lines, built entirely by myself and fitted with a 4-cyl. vertical air-cooled engine, 20 h.p., built in Melbourne by J. E. Tilly. After sundry experiments on July 16th, 1910, I did, amongst others, a hop of 24 ft. Various improvements, such as chain drive in place of belt, water-cooled heads, higher compression, and finally larger cylinders gradually increased the length of flights till at the end of September, 1910, I managed flights of about 100 yards (see *Melbourne Leader*, October 1st). On October 7th, 1910, before half-a-dozen spectators, I successfully covered a distance of 196 yards, rising about 12 ft. high (*Melbourne Argus*, October 8th, 1910). These flights, as far as I know, were the first to be made in Australia by an Australian-built machine. They were published in various papers practically all over Australia as such and were never contradicted. Public opinion may



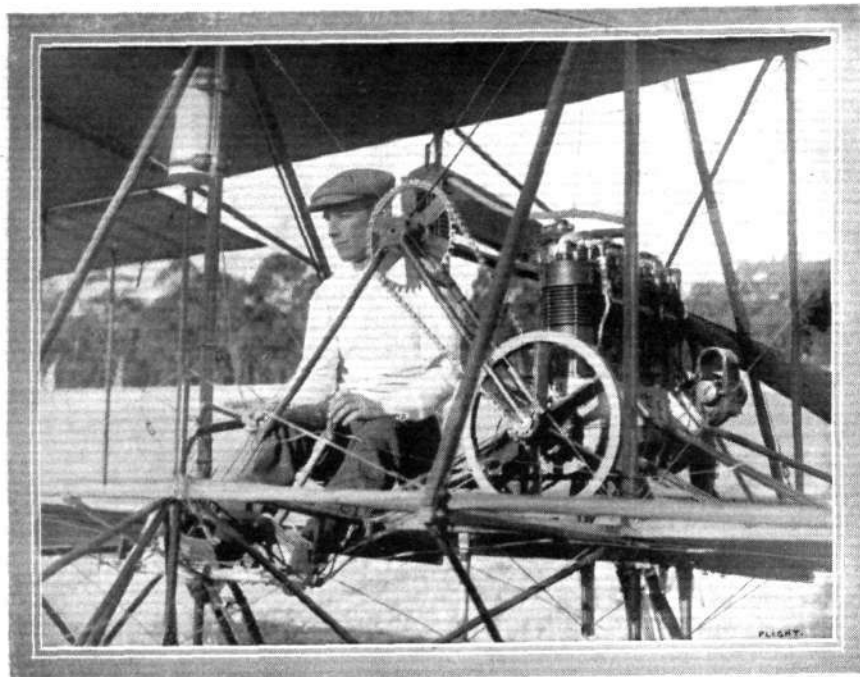
AVIATION IN AUSTRALIA.—Mr. J. R. Duigan and his Wright-type glider, built 1909, started in 1908.



AVIATION IN AUSTRALIA.—Mr. Duigan pancaking at Bendigo Race Course on May 3rd, 1911, after doing about three-quarters of a mile. He had to steer between two trees, hence his proximity to the one seen.



AVIATION IN AUSTRALIA.—On the left, Mr. J. R. Duigan flying over Bendigo Race Course on May 3rd, 1911. The machine had been in the air for about 200 yards when photograph was taken, and the crowd are facing the machine, out of the picture. On the right, Mr. Duigan is seen flying at second attempt in 12 m.p.h. wind on May 31st, when he landed safely.



Mr. R. Dalgan on his machine, which he designed, built, and piloted himself.

be judged from the fact that I received an offer of £100 to make a flight from the Melbourne Cricket Ground in December on the day of a big cycle meeting. This I was forced to refuse, the ground being totally unsuitable. M. Cugnet, as mentioned in your article, agreed to make the attempt, but owing to the ground and want of power, it ended disastrously.



BRITISH-BUILT FARMANS.

WE are glad to be able to announce that one of the most successful aeroplanes in France has come to take up its abode in England, as Mr. Holt Thomas, who since he offered the *Graphic* prize for a mile flight in 1906, two years before Henry Farman succeeded in flying a kilometre, has been so closely connected with aviation, informs us that he has now definitely taken up the rights for the British Empire in the Henry and Maurice Farman machines.

The Farman brothers, whilst being constructors to almost every Government, have been and are receiving huge orders from the French Government, solely owing to the extraordinary results obtained by the French officers on their machines, and Mr. Holt Thomas, who has spent a great deal of time and money in encouraging aviation, is doing no less than he has done up to the present, in bringing the Farman machine to this country to become a British-built machine.

Certainly, the flying performed by the French officers on Farman machines, without incident or accident, in good, bad, and indifferent weather, is remarkable. Mr. Holt Thomas was the candid critic of *FLIGHT* referred to in our issue of March 23rd, who complained of paucity of foreign news which he thought did not demonstrate to our readers what was being done in the way of flying on the Continent. Certainly to see is to believe. To give a few recent instances:—

About a fortnight ago Mr. Mervyn O'Gorman visited the Farman grounds at Buc, when the anemometer registered a wind from 25 to 35 miles an hour. This, however, in no way prevented him from seeing the Farman machines in flight, although it was not a day for pupils. On Thursday week, Captain Godfrey Paine, R.N., visited the Farman grounds, when the wind registered about 24 miles an hour, and counted fourteen machines in the air, flown by all sorts and conditions of pilots, military and otherwise, he himself flying with Maurice Farman. During his visit to the ground, a telephone message was received, stating that two French officers who had left Buc for Verdun, on the German frontier, each with a passenger, had arrived, their time for the 350 kiloms. being 3 hrs. 20 mins.

The Farman machines consist of the Henry Farman biplane and monoplane, and the Maurice Farman biplane, and last, but not least, the hydro-aeroplane of both makes, the Henry Farman hydro-aeroplane at Monaco having carried all before it. The Farman brothers pride themselves on reasonable flying with safety, and Mr. Holt Thomas, whose extended experience of what is going on in aviation, gives him the position to judge, backs their opinion by practical tests of the machines as a passenger on many occasions.

We congratulate Mr. Thomas on having taken up the rights in

On January 25th, 1911, I gave a short exhibition flight for the benefit of the Sporting Editor and the Photographer of the *Melbourne Argus*. This flight was evidently appreciated, as they gave five columns and photos in the next Saturday's issue, January 28th, 1911. In April, at the Bendigo Easter Fair, I exhibited the machine, and on the last day showed it running in the arena, a ground 160 yards long, in a hollow, and surrounded by tents and buildings. Although there was a 12-14 m.p.h. wind side on, I just managed to get off the ground, land, and pull up without damaging anything. Shortly afterwards May 3rd, at the Bendigo Race-course where there was more room. I did several flights, straights and semi-circles of about three-quarters of a mile before about 1,000 spectators. These were the first flights ever seen in Bendigo and it was also the first time I ever had more than 400 or 500 yards of descent ground. These flights paid me very well, and covered the cost of a good bit of experimenting.

Last exhibition flight was on May 31st, when before Mayor Hedges, representing the Defence Department, Mr. W. F. Marshall, Hon. Sec., Aerial League of Australia (Victorian Section), and others at Mia Mia, I did several flights of about half a mile. My brother also flew the machine about 600 yards at 10 or 12 ft., this being only the second time he was ever on it. Wind 12-15 miles per hour by anemometer.

All these flights, judged by present-day performances, seem of course very puny, but considering the many difficulties, that all the work was done single-handed, and that total breakages were only a buckled wheel, a wing tip leading edge, and an upright broken, the results were I think encouraging. Anyway, it was, in the words of the great poet, "A small thing but mine own."



these machines, and the country at having at its disposal British-built machines identical with those which are doing such excellent work in France and other countries.

Probably no machine has been copied more than the Farman, but a copy is not, and never can be, an original; and the British-built Farman will be a machine identical in every way with that produced in France, and built under the supervision of the famous French constructors, with all the latest improvements. Mr. Holt Thomas has also taken up the rights in the celebrated Gnome motor, which has done so much to make flying possible. With the French designs and knowledge of aviation and British labour and material, we should be in a position to make up the leeway we have lost. Any communications as to Farman machines or Gnome motors for Great Britain or the over-sea Dominions should be addressed to the Aircraft Company, St. Stephen's House, Westminster.



HAMEL'S LONDON-PARIS PASSENGER FLIGHT.

FOR quite a long time there have been several of our crack pilots waiting an opportunity to put up still another record by flying with a passenger from London to Paris, the inclination being towards one of the gentler sex as passenger. Mr. Gustav Hamel is at last the hero of this achievement by his splendid flight on Tuesday last, and to Miss Trehawke Davies, who has for so long been a keen follower of aviation, falls the honour of being the first lady passenger to be carried between the two great cities. Starting on his 70-h.p. two-seater Blériot monoplane from Hendon at 9.38 a.m., a course was steered direct for Dover at a good altitude, the intention being to land at Harelott, near Boulogne, for lunch with M. Blériot. At ten minutes to eleven, at a height of about 3,000 ft., Hamel steered over Dover between the Admiralty and Prince of Wales' piers, making a direct course for Cape Grisnez. Unfortunately the original programme was slightly varied by reason of the want of expert manipulation of the petrol pressure-pump by Miss Davies, whereby, when over Ongley on the French coast, about three miles from Ambleteuse, Hamel found his flow of petrol had ceased, there being no help for it but to make a clever spiral descent, which he safely accomplished from a height of 7,000 ft. A re-start was soon made for Harelott, where the travellers arrived at 1.45, and after lunch the journey was resumed at 3.30 for Paris. Again, on this section, Hamel kept to the high air, well up to 7,000 ft., and after what appears to have been a most glorious voyage, landed at Issy at 5.55, where needless to say he and his passenger were most cordially greeted.

HEAD RESISTANCE AND WING STRESSES.

AT the present moment, when the stressing of wing spars in flight is so very much to the fore, it may not be inappropriate for us to remind our readers of an article entitled "Head Resistance, has it been the cause of monoplane disasters?", which we published in FLIGHT of July 9th, 1910. Therein, the author (Mr. R. F. Macfie) drew attention to the compound bending and compression stress that was induced in many monoplane wings due to the forward offset of the lower ends of the lower guys, which are often attached to the landing chassis at a point in advance of the vertical plane containing the wing spar that they stay.

The obliquity is slight and apparently insufficient to afford any appreciable support against head resistance, but it might cause an awkward compound stress in the spar if the latter tried to bend.

Whilst the subject is being discussed, it is advisable to consider it in all its aspects, and we should like to hear what constructors and pilots have to say on the relative merits of the two theories. We publish this week very interesting communications upon the subject from Mr. Mervyn O'Gorman, Mr. L. H. Flanders, Mr. T. W. K. Clarke, and Mr. Blackburn.

Mr. L. Howard-Flanders on the Top Stressing of Monoplane Wings:—

The question of stress in the top bracing wires of an aeroplane is of considerable interest, and there is undoubtedly good ground for M. Blériot's assertion. Those of us who have not previously realised that such a stress can occur, owe much to M. Blériot for his lucid explanation.

There are several ways of guarding against abnormal, excessive, and unsuspected stresses.

One very sound way is to use a very high factor of safety at every point in the machine.

This, however, cuts down the reserve lift available for petrol and oil. Moreover, it has a tendency to make a machine sluggish in answering its controls, by reason of the high moment of inertia due to a very large proportion of the weight being distributed.

A second method is to confine one's attentions to slow-speed machines, which also has obvious disadvantages.

A third way is so to proportion the surfaces that it is impossible for the pilot to force the aeroplane to change its direction in such a short time as to cause an added stress to any part greater than the

initial stress (*i.e.*, to double any stress). This is obviously the best method.

As an example, in the case of the stress in the top bracing, I find that in a given case of a fast, heavy machine: If the pilot can turn the machine through a few degrees downwards at such a speed that it would describe 90° in 3 seconds, the stress on the top of the plane is at the commencement $1\frac{1}{2}$ times the weight of the machine, giving a stress on the top bracing equal to half the weight of the machine, but as the machine dives the stress will rise to $1\frac{1}{2}$ times the weight on the bracing. However, if the time for 90° be increased to 5 seconds, the initial stress on top and bottom bracing will be nil, gradually increasing to a stress equal to the weight of the machine on the top bracing.

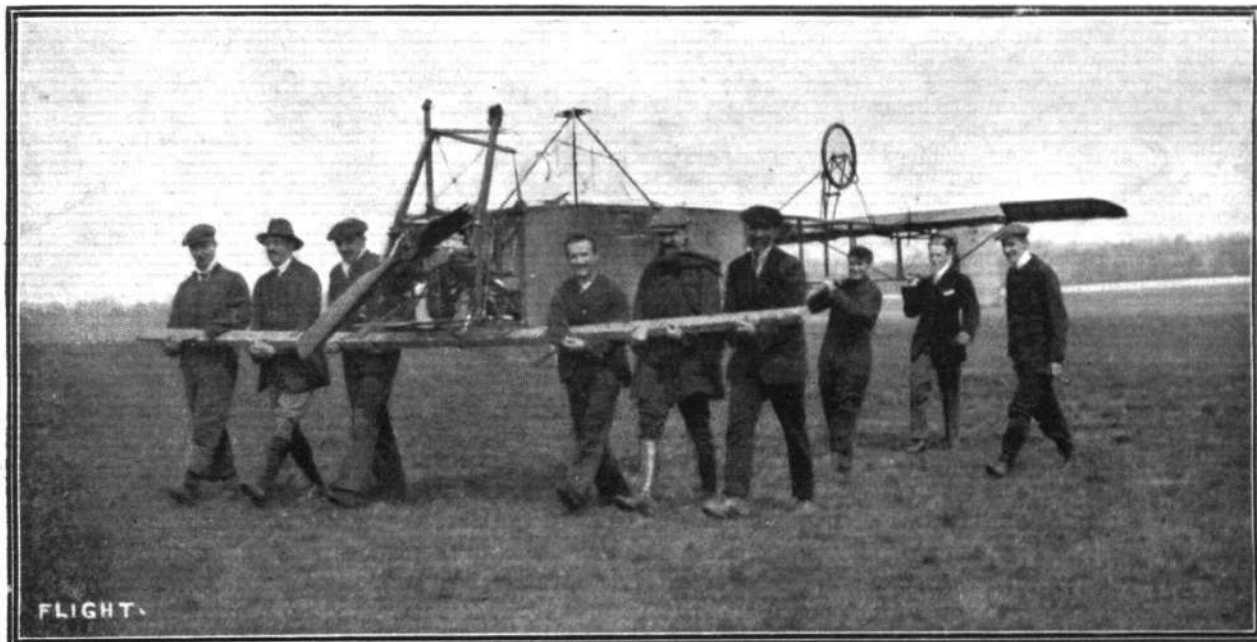
It is, however, improbable that the pilot would continue to dive the machine in such a manner, because, when the stress comes on the top wires, he will be thrown from his seat unless strapped down.

One disquieting feature of this is that the centre of pressure moves forward to an extreme forward position, and in the case of the Blériot plane to within 1-20th of the closed length from the leading edge (Eiffel). The result of this is, that unless the main spar is very far forward, the downward force on the main spar is very high, and there is still an upward force on the rear spar. Also, the tendency of the wings to fold back due to the drift is increased. Fortunately, the C.P. moves backward very rapidly, for a very small decrease in the true angle of incidence.

As these previously unknown terrors are discovered, the practice of trick flying with fancy dives is shown to be more dangerous than previously supposed, and as this sort of flying serves no useful purpose whatever, as it does not even please the spectators, it is to be hoped that these dangerous and foolish sudden dives will no longer be practised by pilots, who can now realise that it is wiser to handle their machines more gently.

The question arises, Is it possible to make an aeroplane that will not change its direction sufficiently quickly to unduly stress any part without sacrificing the immediate response to the controls that is necessary to ensure safety in a high wind?

A further point, should machines be made to travel faster than about 70 m.p.h., up to this speed the stresses are comparatively easy to deal with, but above that speed there is much to consider (at any rate in monoplanes), except, of course, purely racing machines, which must be handled with great care, and even then the risk is high.



BRINGING BACK THE BITS.—A reminiscence of last summer at Hendon. On the left Messrs. W. Gibson, Clutterbuck, and S. Henderson, an old pupil at the Blériot school. On the right, in front, H. Salmet and P. Prier, both of Paris-London-Paris fame, and poor Petitpierre, who was shot by the lunatic Hanot last autumn. Supporting the tail are Frank Champion on the left and George Dyott, both of whom have been doing much good flying in the States, the former on a Gnome-Blériot, the latter on a two-seater Anzani-Deperdussin. Frank Champion, as mentioned in this week's "Eddies," is now in bed suffering from a smashed leg, the result of the accidental discharge of a gun held by Gibson, who figures on the extreme left of the picture, while the two were out shooting rabbits at the Dominguez aerodrome, Southern California. Gordon Jones, of model fame, is walking alongside, bringing back a handful of propeller fragments.

Mr. Mervyn O'Gorman, Supt. of the Royal Aircraft Factory:—

1. I cannot consider Blériot's suggested explanation of top pressure on aeroplanes correct technically. It belongs to the order of speech which may be called "chatty." For all that, he deserves credit for pointing out a great risk.

2. What is wrong with it is that it ignores the existence of the air for one premise, and makes it fundamental for the other, while omitting to mention the true essential "centrifugal force" (though that, too, is only a "chatty" expression).

3. An aeroplane at flight-speed has *not* naturally a parabolic downward path even when the throttle is closed, as he suggests, because whatever one may do in omitting air resistance for elementary diagram of projectile movements, air effects may not be omitted from aeroplane reactions. Such a path is given by compounding a uniform velocity with a uniform acceleration continually at right angles to it (downwards in the case of a projectile).

4. Centripetal force on the constant mass of the aeroplane is greater in proportion to its velocity squared and in proportion to the acuteness of curvature of its path. In Blériot's diagram, at B (and I think it is his own hasty diagram that has led him to the form of statement which he uses), the radius of curvature is so small (it is nil) that all aeroplanes must collapse under top pressure if they could ever take such a path. They do not; the air yields, and they move outwards towards the top of the plane. That is a centrifugal motion, which is resisted by a centripetal force called up from the air into which an attempt is being made to move a large plane *broadways*. This is the cause of the top pressure.

5. Any aeroplane at some such speed as 65 m.p.h. turning on a circle whose diameter is about 100 to 120 yards, is subject to a centripetal force which exceeds the weight of the aeroplane. The resolved component of the weight force down the line of action of this force at any moment and opposite to it in direction may easily be far less than it, and then the top pressure on the plane exceeds the lift pressure, and puts an important effect on the "cabanne" wires.

6. How do movements of sufficiently acute curvature arise? It is unusual, save when a landing must urgently be made on some spot almost below the flyer, to turn on a sharp circular path downwards, save when it is particularly desired to increase the aeroplane's velocity. The absence of a proper velocity indication on most aeroplanes leaves the matter to the flyer's judgment, and as wind gusts affect the question in a most erratic manner, it would be well to consider such as a fundamental part of every equipment.

7. There is another more remote, but not impossible cause for rapid changes of path curvature, particularly on some of the best aeroplanes, wherein the masses are carefully concentrated on the turning centre, and the tail control ample, and that is simply the elevator movements for longitudinal equilibrium which continue, of course, during the movement of descent.

8. I have had photographic "graphs" of the instantaneous changes of inclination of BE 1 and BE 2 taken by a recording apparatus made by Mr. F. Short, one of the assistants at the Aircraft Factory, and these show several minutes on a scale representing three or four inches per minute, the normal variations when the aeroplane is in flight. The number of changes is very considerable and rapid. I will have a copy made and sent to you at a later date if you consider the matter of interest.

Mr. R. Blackburn's (Blackburn Aeroplane Co.) views:—

I have read with profound interest the translation in your paper of M. Blériot's report to the French Minister of War, and I feel sure that his communication must have come as a revelation to most aeroplane constructors. That any one of the prevailing conditions of flight should absolutely reverse the loading of the planes has hitherto not been entertained, and yet this very simple phenomenon disclosed by M. Blériot can leave no doubt that there is one prevailing condition which causes this reversal of stress. It is, however, only possible under the one condition disclosed by M. Blériot, and is absolutely momentary. As to what this effect must have on the designing of the top stays will naturally depend on the speed of the machine. For normal velocities of 55 miles per hour, the factor of safety need not be as great for the upper bracing as for the lower, because the momentum of the machine, due to a sudden descent from the horizontal, can never exceed the value given by the flying speed of the machine, whereas the strains on the under bracing can reach an enormous figure by a very steep *vol piqué* depending on the distance between the heights from which it is made and the point where the machine is flattened out. It is quite possible for this stress to reach a value equal to 10 to 15 times the live load, the velocity at the end of the dive being much in excess of the normal flying speed. Under these conditions, therefore, I should deem it necessary to have a factor of safety of 15 for the under

bracing, and 5 for that of the top. For normal flying this is tolerably excessive, but then how often is it a machine is not flown normally, and this possibility must be provided for. When the velocity of the machine, however, reaches a much higher figure—which of course will be the case in the near future—then, because of momentum being proportional to the square of the velocity, the staying above may have to be made equally as strong as the under stay wires to provide for the reversal of stress caused by a sudden change in the direction from the horizontal to a steep dive.

Mr. T. W. K. Clarke's Analysis:—

M. Blériot's report on the possibility of top pressure existing on aeroplane wings opens up a field of view of the very highest importance. While in the main agreeing with his conclusions, a quantitative study of the question seems to raise some difficulty in a complete acquiescence in his conclusions.

The finding of the extra load on the wings, due to motion in a vertical curve, presents no difficulty. If any machine is made to travel in a vertical circle of radius R feet, with velocity V feet per second, it must be acted upon by a centripetal force, $\frac{V^2}{Rg}$ lbs., per lb. of machine.

In the case of a machine whose normal wing-load is W lbs. (= the whole weight of the machine), and which, after flying horizontally, starts to turn down, we should have $W - L = W \cdot \frac{V^2}{Rg}$ where L is the new loading considered as positive when in the same direction as the normal load. So, for a machine on a rising curve, we should have $L - W = W \cdot \frac{V^2}{Rg}$.

From these we can construct the following table:—

Table Connecting the Radius of the Vertical Path, the Speed, and the Whole Load.

Falling curve—Negative load	Rising " —Positive "	= 0		W	2W	3W
		= 2W	3W	4W	5W	
Speed 40 m.p.h.	110 ft.	55 ft.	36 ft.	27 ft.
" 50 "	170 "	85 "	56 "	42 "
" 60 "	240 "	120 "	81 "	60 "
" 70 "	330 "	165 "	110 "	82 "
" 80 "	430 "	215 "	143 "	107 "
" 90 "	540 "	270 "	180 "	136 "

Note.—Table shows why Blériot gives a factor of safety of 3 for the top guys to correspond with a factor of safety of 5 for the bottom.

Now the question arises, do or can machines turn in such small vertical circles? For example, a machine travelling at 70 m.p.h., in order to produce a negative load equal to the normal positive load, would have to travel in a vertical curve of radius 165 ft.; this can best be appreciated by saying that it would have to be turned from the horizontal path to a downward path of say 1 in 5 in 33 ft., or one-third of a second, i.e., in less time than it takes to count two. That this should be so, seems to me extremely improbable; but on this point there are others much more qualified to speak than myself. Without such evidence the above cause by itself does not seem to me sufficient, but we do not have to seek far for other factors.

In normal flight, the surfaces have an angle of incidence of say 5° to the relative wind, if there should be a negative pressure on the surfaces as above, the surfaces must have a negative angle of incidence of say 9°, and in passing from one incidence to the other the surfaces must have passed through all intermediate incidences. Now, although at all ordinary incidences the centre of pressure does not vary much, and what motion it has is on the safe side, that is to say as the angle of incidence decreases the C.P. moves forward and so produces a moment tending to increase the angle again. But as the angle of incidence is still further decreased, there comes a limit after which the C.P. moves back very fast, almost suddenly, thereby soon producing a very large moment, and a very dangerous one in that its direction tends to still further decrease the incidence or to make it negative. In the very early days of flight the Wright brothers pointed this out as one of the chief dangers. Now such a state of affairs having come about, it is my opinion that the pilot would in any case have the time and power to counteract it, it would be "all up" with his control over his machine, no matter how strong the upper guys might be. If it was possible to recover after having experienced a negative pressure on the main surfaces, then we might have expected that in a fair proportion of the cases cited by M. Blériot, recovery would have been effected, even though a guy or two on the top had been broken; but there is only one such case, viz., that of Lieut. Duvernois, particulars of which I have not seen.

What then should be the preventive?

The length of the fuselage, and the size of the fixed portion of the tail would both be determining factors in the radius of the vertical

curves, so that if possible both of these should be proportionately large. Then, as Mr. Handley Page pointed out in his paper last week before the Aeronautical Society, curves for the surfaces can be selected such that they are efficient at good-sized angles of incidence, and also through a fairly wide range on either side of this best value, also a little consideration will show that those machines having the elevator in front, *i.e.*, the so-called "tail-first" machines, are not subject to this trouble. But in nearly every case the chief preventive must always be care on the part of the pilot.

I should like (if I do not rob others of your valuable space by so doing) to add a few words in connection with M. Blériot's interesting suggestion that one's own personal "factor of safety" should determine the constructional factor of safety of a machine. He says, "I feel certain that a man seated cannot resist a shock directed from beneath upwards of a magnitude greater than twice his own weight without being immediately upset." Now some few years ago I, among many thousands of others, on many occasions indulged in the sensation of "looping the loop" (at the Crystal Palace). In this case the centrifugal force on anyone at the top of the loop is considerably greater than his weight; therefore, at the bottom the force acting on one is considerably over twice one's weight (if the loop is a perfect circle it is easily seen to be over six times). I have on some such occasions tried to analyse my feelings, but beyond feeling very

heavy, especially noticeable in the arms, I have not felt further discomfiture.

Concerning M. Blériot's report on the failure of monoplanes, which we published last week, there appears to have been some room for misinterpretation of the exact significance of the factors involved, particularly with reference to the influence of flight speed on the forces produced. The top pressure that comes upon the plane through the checking of its momentum depends upon the rate at which the flight path is caused to change in direction, consequently the primary emphasis attaches to the brusqueness with which the pilot utilises his elevator in order to change altitude for the *vol plané*. For a given brusqueness of elevator manipulation, the effective rate of change of direction, that is to say, the angular velocity of the machine, will depend on the absolute flight speed at the moment of the operation. In other words, an abrupt use of the elevator might be quite safe on a slow speed machine, but very dangerous on a high speed machine, as events have proved; conversely, a gentleness of control is itself a factor of safety when flying fast. The purpose of this paragraph, however, is to emphasise the fact that it is the *angular* velocity of the machine that is the important point in M. Blériot's report.

THE WRIGHT PATENTS IN GERMANY.

WITH reference to the action of the German Patent Office in annulling the main claim of the Wright Patents, the following letter has been sent out by the Wright Brothers.

"We are in receipt of information from Germany, regarding the recent action of the German Patent Office, nullifying the main claim of the Wright German patent. A letter from our attorney says:—

"After the discussion of all these points, the Division took one hour and a half to deliberate, and then pronounced as their judgment that claim 1 should be annulled on the disclosure contained in *L'Aéronaut*, page 103, passage 5, in connection with *Automotor*, of February 15th, 1902, page 197, column 1, lines 2 to 4. The full grounds were not verbally pronounced. It was said that they would be given in writing."

"The citation from *L'Aéronaut* is from a report of an address by Mr. Chanute before the Aero Club of France, in April, 1903, describing the experiments of the Wright brothers at Kitty Hawk, N.C., in 1902. The citation from the *Automotor* is a synopsis of the address of Mr. Wilbur Wright before the Western Society of Engineers in 1901, describing the experiments at Kitty Hawk in 1901. The statement of Mr. Chanute which is cited as a disclosure of the Wright invention was as follows:—

"To assure transverse equilibrium, the operator works two cords, which warp the right and left wings, and at the same time adjust the vertical rear rudder."

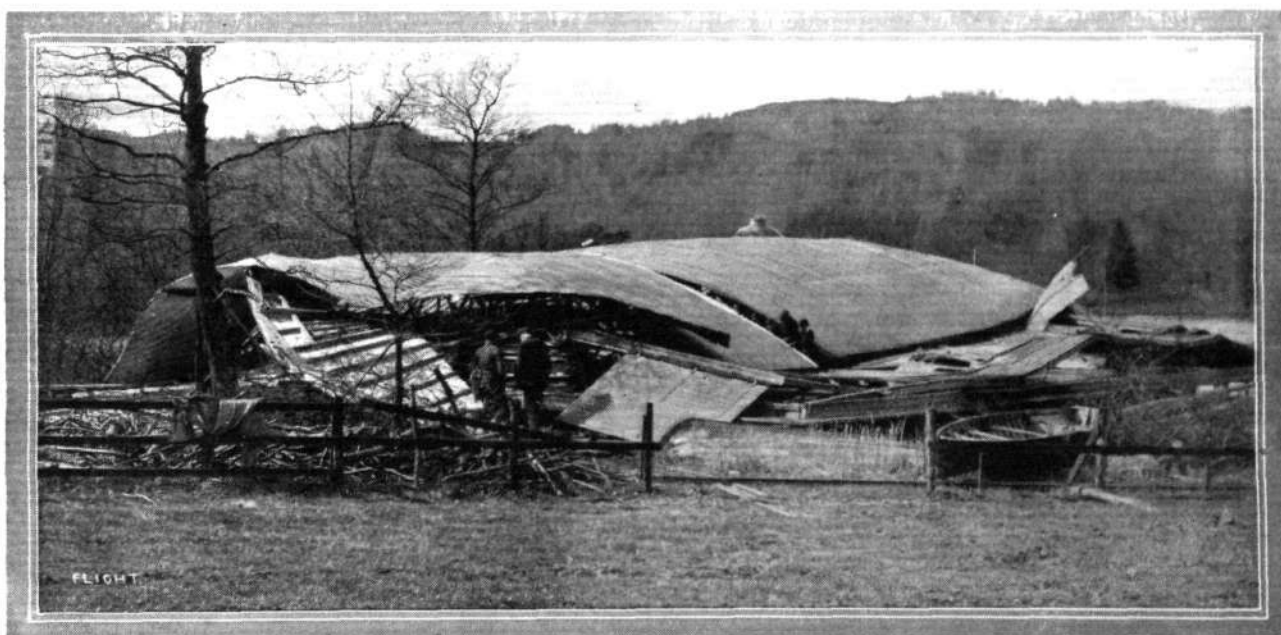
"Under the laws of Germany and France, a disclosure of an invention by the inventors, or by anyone else, who has knowledge of it, before the application for a patent is filed, is sufficient to render the patent void. The disclosure must be sufficient to enable anyone to understand how to build and use the invention."

"The German Patent Office has taken the extreme position that these few words were sufficient to teach anyone how to build and operate a flying machine in 1903, and that they have cancelled the right of the inventors to any property in their invention in Germany. The Wright brothers do not believe that this action of the Patent Office is based on a proper interpretation of the law, and will take an appeal to a higher tribunal."

"The address of Mr. Chanute, on which the German decision turned, was delivered about two weeks after the date of the French application, and, therefore, could not be used against the Wrights in the French trial, which they won. The German application was not filed until after the date of this address by Mr. Chanute."

"WRIGHT BROTHERS."

The reference to our sister journal the *Automotor*—famously known as the *Auto*—will recall to many of our readers the fact that the early doings of practical workers in the field of flight were fully recorded in those pages, until the foundation of *FLIGHT* as a separate journal in 1909, in spite of the fact that it was generally thought that no practical result would be forthcoming, and no other paper considered them worth devoting space to.



The gale which swept the country on Friday and Saturday accounted for the demolition of the hangar sheltering Captain E. W. Wakefield's two hydro-aeroplanes on Lake Windermere. In its collapse both machines were damaged, part of one of the planes being seen in our photograph of the wreckage protruding from the side. This incident, we presume, will be regarded as a score in their favour by the anti-aeroplanists of Windermere.

FROM THE BRITISH FLYING GROUNDS.

Brooklands Aerodrome.

LAST week was too windy for much flying, but every possible opportunity was seized by the various schools.

On Wednesday, the star turn was by Sabelli, on the Deperdussin fitted with V-Anzani. In the morning he flew for 25 mins. in a gusty wind, and during the evening calm put up a 45-min. flight. Lieut. Parke was on the Avro, reaching 2,000 ft., where he found a pretty strong wind. Later on he took up Mr. P. K. Turner as passenger; but, after little more than a circuit, the motor began to fail, and, owing to a side-wind, he was forced to land on the finishing straight. This he accomplished successfully, but when slowly taxi-ing along, the wind caught his tail, slewing him into the ditch alongside the track and breaking the front skid. The Bristol School was active during the afternoon, Pizey and Merriam both giving Lieut. Mackworth instruction from the passenger seat. Thursday was too windy for any flying, but Friday showed a slight improvement. In the early morning Sabelli on the Deperdussin flew for 62 minutes. At the Bristol School Pizey was on the monoplane, the machine travelling very strongly indeed. Fleming took up Major Bannerman and Mackworth for tuition, after which Major Bannerman made some solo flights. Lieut. Mackworth then had his first try at rolling, finishing with an unfortunate collision with the monoplane, which was at rest, the only damage done, however, being a broken rudder post. Raynham was out on the Burgess-Wright with a couple of pupils, Hedley and Young. Parke took out the School Avro for a trial, but after a short flight engine trouble developed—a big end or so run out owing to the oil-pipe coming adrift—and brought him back.

Saturday was another poor day. In the morning Mr. "Partridge" brought out the old Howard-Wright monoplane with the new A.B.C. engine, and made a number of flights. Lieut. Parke had intended flying the Military Avro, which by the way they have christened "Elenor Glyn" for fairly obvious reasons, over to Salisbury, in order to compete for the Mortimer Singer prize. He took up Sayers and full load of petrol for a trial, and got up well in spite of a flagging engine. On landing, he taxied into a step ladder, cutting same in half and incidentally breaking the propeller, which was the last suitable one in stock. In the evening, Sopwith took out the Wright to test the new Bristol propellers. He flew a circuit or so with the engine firing on six cylinders before landing.

On Sunday a heavy rainstorm during the afternoon subdued the wind. The first at work was Pizey on the Bristol biplane, taking up his cousin, Mr. Cyril Pizey, for a passenger flight. Several old pupils, Lieuts. Longcroft and Lawrence and Capt. Raleigh, then indulged in solo "joy-rides," Lawrence reaching an altitude of about 600 ft. Fielding, a pupil, was also making circuits in good style. Petre and Sabelli, on Deperdussins, were both out for a short time, and "Partridge" was on the Howard-Wright monoplane.

Whilst there was not much flying during the week a lot was being done in the sheds, and many old friends will be out again soon. Spencer having bought the old Macfie biplane has fitted it with a Farman type tail and elevator, but kept the low wheel-base and high engine position. This machine is ready and only waiting for a fine day to come out. The Hanriot belonging to Mr. England has also been repaired under the supervision of E. V. B. Fisher, who is also waiting on the weather.

Percival's biplane and Flanders monoplane are both nearing completion, while Sopwith's Howard-Wright biplane has been fitted with dual control, the pilot and passenger now sitting side by side.



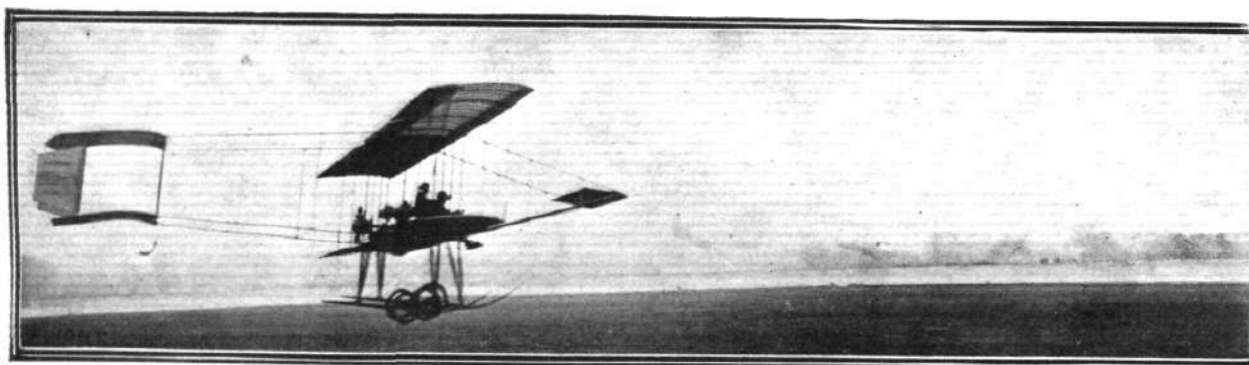
THE EWEN SCHOOL AT HENDON.—From left to right Mr. T. S. Atcar, Miss Dorothy Prentice, Messrs. E. Lawford, Dubois, W. H. Ewen, and Gist. Seated below are Messrs. Warren and Baumann.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Weather conditions have been so bad most of the past week as to make out-door work impossible. In spite of a 25-mile wind, however, Mr. Lewis Turner took out biplane No. 2 on Wednesday morning, and put in 15 mins. at straights and circuits, but thought it wise to abandon further work in the field, and retired to the works for theoretical instruction to the pupils.

Blériot School.—The aviation pupils have to be up betimes in the morning in these days to be able to get any practice at all, and at the Blériot school this is realised, the pupils turning up in full force at six.

On Monday last week, the only time the weather allowed the pupils to practise was from six to half-past, when Messrs. Aubert, Pothet, and Teulard each managed to put in one straight before the wind rose.



Pizey, of the Bristol School at Brooklands, making a clean landing after a tuition flight with a pupil.

Tuesday was a blank day, but on Wednesday a further half-hour's practice was indulged in from 6.30 to 7 o'clock in the morning by M. Aubert, who, alternating with Messrs. Teulard and Clappen, made three straights, during which time the latter pupils put in a couple each.

• The rest of the week the weather was too unfavourable for any outside work to be done.

W. H. Ewen School.—At the W. H. Ewen school things are looking very brisk, and to accommodate the number of pupils, a new school machine will be ready for use in a few days, while to add to the pupils' experience, the school is being equipped with a two-seater, which is expected to arrive shortly. After the recent unfavourable weather, the pupils were greatly rejoiced on Sunday when they were able to get in a whole afternoon's practice in ideal weather conditions. Lieuts. Pennycuik and Kerrick, Mr. Apcar, and Miss Prentice commenced their rolling practice, and, successfully avoiding the usual *chevaux de bois*, all made capital progress, while Lieut. Pennycuik, on mounting the machine a second time, accomplished a beautiful straight flight over the full length of the course. Messrs. Dubois, Baumann, and Warren were each several times in the air, their flights on each occasion being steady, and their landings neat. After a short test flight on the Blériot, Ewen put up a fine exhibition on the 28 Deperdussin, being in the air for about half-an-hour.

Salisbury Plain.

Bristol School.—Terrific wind on Monday prevented any attempts at flying all day.

• Tuesday was still very windy, but Prier was out on one of the monoplanes, Jullerot being on a school biplane making figures of eight. Later on Hotchkiss started with Lieut. Jennings, but soon returned on account of strong *remous*. Prier was again on a monoplane, but descended at Fargo, his switch wanting adjusting. Hotchkiss took a mechanic over to Prier, the latter afterwards making a fine flight back to the hangars. Pixton was up with Lieut. Hall, but still found the *remous* very strong. Later in the morning Jullerot made a couple of trial flights, after which nothing further was done.

A high wind of fully from 25 to 30 m.p.h. prevailed all day Wednesday. Jullerot was testing flying conditions for about 10 minutes, while Pixton made a flight with Lieut. Jennings. Later Jullerot made an ascent before some visitors, and these were the only flights made on the Plain all day.

Weather was far too bad on Thursday to permit of any out-door work all day.

At a very early hour on Friday Jullerot was making a trial, but found the wind too strong to permit of school work. Gordon England went up a little later, but the wind was still very strong. At 7 o'clock Lieut. Bowers started for a flight on the monoplane, Jullerot also going out, whilst Bendall ascended with a mechanic. England and Jullerot were also making solos. Prier made a splendid flight on one of the Bristol military two-seater monoplanes, Lieut. Antonini being passenger. He quickly rose to 2,600 ft. with gusts of 40 m.p.h. following, and eventually landed by means of a clever *vol plané*. In the afternoon Jullerot made some good flights, during one of them making a trip from North Down Camp to Lark Hill.

No flying all day Saturday, wind being very strong and gusty.

Lieut. Bowers, on Sunday, made a trial flight on the monoplane, with Lieut. Moore up as passenger, very early in the morning, landing at Fargo. Jullerot and Prier set out to go to Lieut. Bowers on biplane No. 55, Prier flying the monoplane back to the hangars whilst Jullerot took the passenger back on the biplane.

At 6.14 Lieut. Bowers, observed by Lieut. Connor and Wyness Stuart, started on the monoplane for an attempt on the Mortimer-Singer prize, the wind being very stiff at the time, at least 20 m.p.h., but the machine flew beautifully, and Lieut. Bowers carried out a fine flight lasting just over an hour. During this time he covered somewhere about 66 miles, he being forced to descend after a frightfully strong rain and hail storm rendered flying hopeless. Although his speed varied as much as from 65 to 40 m.p.h., the machine kept a wonderfully steady keel. Prier made a good flight on the Bristol monoplane, attaining a height of 3,450 ft. in 19½ mins., having Lieut. Antonini with him, and landing with a clever *vol plané*. At the same time, Jullerot took Lieut. Edmunds, a new pupil, for his first tuition flight, this same pupil immediately afterwards ascending with Pixton for two trips. Lieut. Edmunds showed a marked aptitude for his subject and managed the lever very well indeed in the second flight. He will be sent out for solo at the next opportunity. Col. Smeaton made a good flight on No. 66 as also did Lieut. Ashton. In the afternoon Lieut. Ashton set out to undergo necessary tests for the *brevet*. He carried out four excellent figures of eight with sharp bankings, but unfortunately had to descend as an ignition wire had broken.

The weather was hopeless all day on Monday, and work had to be confined to hangars.



Miss Dorothy Prentice, of the Ewen School, being initiated into the Blériot control.

Royal Flying Corps.—Since Wednesday of last week there has been practically no outdoor work, although Captain Sykes had his Vickers-R.E.P. out for testing the 70-h.p. engine, and with Macdonald, just back from his Australian trip for the Bristol Co., at the wheel, it made a few hops. Also on Wednesday week the 70-h.p. Nieuport was being erected for Capt. Loraine. Thursday, Friday and Saturday were blank as far as outdoor work was concerned, but the weather eased up a little on Sunday when Capt. Loraine had the Nieuport out. Unfortunately in taking off, one of the wires from the skid to the axle broke and burst a tyre, bringing the machine down on one wing and eventually turning the machine on to its nose. Luckily Capt. Loraine escaped serious injury and the machine sustained little damage. The Vickers-R.E.P. was then brought out, and did a little flying round the ground until wind and rain put an end to the proceedings. On Monday the wind was too shifty for flying, and work was perforce confined to the hangars. Capt. Fulton's Deperdussin was fitted with a six-cylinder Anzani engine and the Breguet biplane was dismantled for road transport, to demonstrate the rapidity with which this operation could be carried out. Work on the new Army and Navy hangars at Everly Down started on Monday last, and it is understood that the twenty-four double sheds have to be completed in ten weeks' time.



MR. H. BARBER GIVES UP FLYING.

MR. BARBER has decided to give up flying and the construction of aeroplanes on account of the steadily increasing expense of keeping to the fore. Events move so rapidly in aviation now that in his opinion it is necessary to build at least a machine every two or three months if one is to keep abreast with the times, and, needless to say, a hobby on those lines is pretty expensive.

Mr. Barber has been a prominent figure in British aeronautics since the early days when he was the solitary aviator on Salisbury Plain, now one of the most important aviation centres in England. It was there he carried out much experimental work, and taught himself to fly on a machine of original design invented by himself. All his machines, over two dozen of them, have been built to his design. The first was an all-steel monoplane, with reciprocating wings, and fitted in front with a 52-h.p. Antoinette engine. The next, while a monoplane, was of much the same design as the Voisin-Canard of later date, and had a 60-h.p. Green. Then came a long string of the well-known Valkyries, the first British monoplane to carry passengers, which record they held for nearly a year; and latterly the Viking biplane. Last year Mr. Barber, according to flights recorded in the Press, flew 6,718 miles, and carried 151 passengers, of whom 42 were ladies, besides making innumerable unrecorded flights which would probably very largely increase the above mileage.

Interviewed, Mr. Barber stated that he was undecided what he would do now. He had intended to go for an extended cruise in the Mediterranean, but owing to several advances he had lately received from aeronautical firms, he might possibly continue his connection with aviation as a consulting aeronautical expert.

A book of his experiences, and on the possibilities of aviation, will probably soon appear.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Army and Navy Aviation Prizes.

THE competition for the above prizes of £500 each, presented by Mr. A. Mortimer Singer, closed on March 31st, 1912. The following distances have been recorded:—

Army—

July 17th, 1911. Late Lieut. R. A. Cammell, R.E., on Blériot 2-seater, 70-h.p. Gnome, at Salisbury Plain ... 100 miles
January 29th, 1912. Lieut. B. H. Barrington-Kennett, on Nieuport 2-seater, 50-h.p. Gnome, at Salisbury Plain... 111½ „
February 14th, 1912. Lieut. B. H. Barrington-Kennett, on Nieuport 2-seater, 50-h.p. Gnome, at Salisbury Plain ... 249½ „

Navy—

August 16th, 1911. Capt. E. L. Gerrard, R.M.L.I., on Short biplane, 50-h.p. Gnome, at Eastchurch ... 129 „
March 11th, 1912. Lieut. A. M. Longmore, R.N., on Short tractor biplane, 70-h.p. Gnome, at Eastchurch ... 172 „
The Committee of the Royal Aero Club will make the official award at its next Committee Meeting, on April 16th, 1912.

British Empire Michelin Cup No. 1.

The British Empire Michelin Cup No. 1 may now be competed for, and the rules and entry form can be obtained from the Club.

British Empire Michelin Cup No. 2, £600.

The contest for the current year consists of a cross-country circuit of about 186 miles. Competitors may choose their own course, which must be previously approved by the Club. The competition is now open, and the rules and entry form can be obtained from the Royal Aero Club.

Competition Rules.

The Competition Rules of the Royal Aero Club have now been issued to all certified aviators. Any member desiring a copy of these rules can obtain the same on application to the Club.

The following aviators have been placed on the Competitors' Register of the Royal Aero Club:—

Competitors' Register.

- | | |
|-----------------------------------|----------------------------------|
| 1. Astley, H. J. D. | 18. Benwell, Maj. R. L. |
| 2. Aitken, A. H. | 19. Borton, Lt. A. E. |
| 3. Abbott, Charles R. | 20. Beor, Lt. B. R. W., R.F.A. |
| 4. Abercromby, R. O. | 21. Barrington-Kennett, Victor |
| 5. Allen, Capt. C. R. W. | 22. Cockburn, G. B. |
| 6. Allen, D. Leslie. | 23. Cody, S. F. |
| 7. Boyle, Hon. Alan. | 24. Cook, Lt.-Col. H. R., R.G.A. |
| 8. Barber, H. | 25. Conner, Lt. D. G., R.A. |
| 9. Board, Capt. A. G. | 26. Cockerell, S. P. |
| 10. Bouwens, B. G. | 27. Crawshaw, R. O. |
| 11. Barrington-Kennett, Lt. B. H. | 28. Chataway, J. D. P. |
| 12. Blondeau, Gustav. | 29. Chambers, C. F. M. |
| 13. Beatty, Lt. W. D., R.E. | 30. Cutler, Herbert D. |
| 14. Burke, Capt. C. J. | 31. Charteris, Ronald L. |
| 15. Brooke-Popham, Capt. C. R. | 32. Drexel, J. A. |
| 16. Ballard, Frank M. | 33. Dawes, Capt., George |
| 17. Bower, Lt. John G., R.N. | 34. Ducrocq, Maurice |

- | | |
|--|---|
| 35. de Havilland, G. | 84. Macfie, R. |
| 36. Darroch, G. R. S. | 85. Martin, J. V. |
| 37. Dolphin, W. H. | 86. Marks, Lt. C. H. |
| 38. Davies, Lt. R. B., R.N. | 87. Massy, Capt. S. D. |
| 39. Dickson, Capt. B., R.F.A. | 88. McArdle, W. E. |
| 40. de Grey Warter, H. | 89. Metford, L. S. |
| 41. Driver, E. F. | 90. Moorhouse, W. B. R. |
| 42. Egerton, Hon. M. | 91. Meredith, C. W. |
| 43. Fulton, Capt. J. D. B., R.F.A. | 92. Malone, Lt. C. J. L'E., R.N. |
| 44. Fenwick, R. C. | 93. Ogilvie, Alec. |
| 45. Fisher, E. V. B. | 94. Paterson, C. C. |
| 46. Farman, H. | 95. Pixton, C. H. |
| 47. Grahame-White, C. | 96. Pizey, C. P. |
| 48. George, A. E. | 97. Prentice, W. Ridley. |
| 49. Greswell, C. H. | 98. Parke, Lt. W., R.N. |
| 50. Gordon-England, E. C. | 99. Porte, Lt. J. C., R.N. |
| 51. Gregory, Lt. R., R.N. | 100. Percival, N. S. |
| 52. Gerrard, Capt. E. L., R.M.L.I. | 101. Petre, Henry A. |
| 53. Grey, Lt. S. D. A., R.N. | 102. Radley, James. |
| 54. Gordon, Capt. R., R.M.L.I. | 103. Roe, A. V. |
| 55. Garne, Tom. | 104. Reynolds, Lt. H. R. P., R.E. |
| 56. Hynes, Lt. G. B., R.G.A. | 105. Randall, Eng.-Lt. C. R., R.N. |
| 57. Hamel, Gustav. | 106. Raleigh, Capt. G. H. |
| 58. Hucks, B. C. | 107. Singer, A. M. |
| 59. Higginbotham, G. | 108. Snowden-Smith, Lt. R. T. |
| 60. Harding, H. J. | 109. Sopwith, T. O. M. |
| 61. Hetherington, Lt. T. G. | 110. Sassoon, E. V. |
| 62. Henderson, Brig.-Gen. D., C.B., D.S.O. | 111. Smith, S. E. |
| 63. Hewlett, Mrs. H. B. | 112. Samson, Com. C. R., R.N. |
| 64. Hall, Lt. R. H. C., R.N. | 113. Sebag-Montefiore, Lt. T.H., R.F.A. |
| 65. Hutcheson, Capt. S. | 114. Sykes, Capt. F. H. |
| 66. Harford, Lt. H. H., R.F.A. | 115. Smeaton, Lt.-Col. C. O., R.A. |
| 67. Harrison, Capt. R. S. M. | 116. Somerset, Somers. |
| 68. Head, Lt. C. G. W., R.N. | 117. Stocks, Mrs. C. de B. |
| 69. Hamilton, Capt. P. | 118. Thomas, H. J. |
| 70. Jezzi, G. P. L. | 119. Turner, C. C. |
| 71. Jenkins, F. C. | 120. Travers, J. L., jun. |
| 72. Johnstone, W. D. | 121. Valentine, James. |
| 73. Jones, A. D. | 122. Weir, J. G. |
| 74. Kemp, R. C. | 123. Watkins, Lt. H. E. |
| 75. Low, A. R. | 124. Wood, Capt. H. F. |
| 76. Longmore, Lt. A. M., R.N. | 125. Watt, Capt. W. O. |
| 77. Loraine, R. | 126. Wilson, D. Corbett. |
| 78. Lawrence, W. | 127. Jullerot, H. |
| 79. Longstaffe, J. L. | 128. Hart, William Ewart. |
| 80. Longcroft, Lt. C. | 129. Santoni, D. Lawrence. |
| 81. Moore-Brabazon, J. T. C. | 130. Ewen, W. H. |
| 82. McClean, F. K. | 131. Turner, Lewis W. F. |
| 83. Morison, O. C. | 132. Raynham, F. P. |

The number at the side indicates the Register number.

Easter Holidays.

The Club premises will be closed from Thursday, 4th April 1912, till Wednesday, 10th April 1912, for spring cleaning.
166, Piccadilly. HAROLD E. PERRIN, Secretary.

AVIATION AND ASTROLOGY.

AN astrologically inclined reader sends us particulars concerning the disposition of the planets on the occasion of British aviation accidents. Those interested in the almost forgotten science of astrology will be interested to note the malefic significance of the moon in aspect to Mars, Mercury, Saturn, and Uranus, the conjunction being, of course, the strongest possible relationship, and therefore intensifying the effect. According to astrological standards, Jupiter should not have an evil influence of this sort, except possibly through a purely personal influence on the pilot in whose horoscope it might be badly placed, yet two accidents in the list have Jupiter in conjunction with the moon. In order to collect data of any value in connection with this subject, it is essential that the exact time of an accident should be known, for while the major aspects mentioned in the table may load the gun, so to speak, it is more likely to be a variety of other evil influences that pull the trigger at the precise moment of the catastrophe.

Any astronomical almanack will show the principal aspects of the

more important planets for every day of the year. The following are our correspondent's compilation:—

July 12th, 1910.—Rolls at Bournemouth. (Conjunction of Jupiter and moon on July 12th.)

May 25th, 1911.—Benson at Hendon. (Double conjunction of Mercury and Saturn with the moon on May 26th.)

August 1st, 1911.—Napier at Brooklands. (Conjunction of Jupiter and moon on August 1st.)

August 18th, 1911.—Ridge at Aldershot. (Double conjunction of Mars and Saturn with the moon on August 17th.)

September 13th, 1911.—Cammel at Hendon. (Conjunction of moon with Saturn on September 13th, and with Mars on 14th.)

December 6th, 1911.—Oxley and Weiss near Scarborough. (Conjunction of Mars and moon on December 5th.)

February 17th, 1912.—Gilmour at Richmond. (Conjunction of Mercury and moon on February 17th.)

AIR EDDIES.

ONE of the Hendon pupils, Mr. W. T. Warren, who, by the way, is just ready to do the tests for his certificate, has invented a safety helmet which certainly should attract considerable attention. Inside the leather covering, well padded with horsehair, is a system of flat steel springs which have the effect of distributing any shock sustained by them over a large area. As can be seen from one of our photographs, it is not by any means unsightly in appearance, and, as for its shock-resisting qualities, I had the privilege of belabouring the inventor about the head with a piece of two-by-two, he still smiling and remaining pleased with himself the while. Naturally he was wearing his helmet at the time. At my suggestion he undertook to take a running leap full tilt at the hangars, an incident which we were lucky enough to snap. I imagine he is looking for someone to manufacture and market the article for him.

Mr. R. Wickham, who many of us will remember as an old friend and pupil of Grahame-White, is now out in America improving the shining hour by instituting a passenger-carrying aeroplane service between Long Beach and other Long Island summer resorts. It is with a four-seater biplane that he figures upon carrying out these flights.

Ewen has completely renounced all his old musical traditions for he has paid a visit to the hair-dresser's and had most of his head resistance removed. I wonder if he did this from purely aerodynamic considerations?

The many people that came into touch with Mr. Bernard Isaac while he was holding office as manager of the Aeroplane Supply

Co., Ltd., will no doubt be interested to learn that he has joined the Grahame-White Aviation Co., Ltd., to serve in a similar capacity at their West-end branch office at 166, Piccadilly.

Something of a record was achieved by one of the latest pupils at the Ewen school, Lieut. Pennycuik, R.E., on Sunday last. At his first attempt he rolled the school Blériot to the far side of the ground and back again in dead straight line. For his second attempt he was told to accelerate his engine a bit, and get his tail up more. On his return "roll," the tail got up so nicely that he pulled back his *cloche* and flew back to his starting point much to the joy of his instructor, his fellow pupils, and no doubt himself.

THE only other occasion on which I have recollections of a pupil doing a decently straight roll for his first time on a Blériot, was when Hopkins, a pupil of the Chanter school, when they had their headquarters at Hendon, started his tuition. But in Hopkins' case it seemed somewhat of a fluke, for he did not do another straight roll for many a long day afterwards.

The little Grahame-White baby biplane, which has not been seen in English air since Grahame-White's last departure for the States, is being got ready in time for the Easter meeting at Hendon, and a very nippy little machine it should be, too, when it is finished, for the biplane tail, which always struck me as being rather inefficient, has been removed and a monoplane type of tail fitted in its place. The whole machine is a very neat job indeed, and I am looking forward to Grahame-White's "exhibiting" on it around next week-end.



HOW TO TEST A SAFETY HELMET.—Mr. W. T. Warren, wearing a helmet of his invention, takes a flying leap at the hangar to demonstrate its utility. Interested spectators to the rear are Messrs. Lewis Turner, W. H. Ewen, and A. M. Ramsey.

The monoplane which he is getting ready for the War Office Trials, is to be, I believe, a more or less all-steel version of the Nieuport, with several modifications, notably to the chassis and to the fuselage. Owing to the necessity for providing duplicate controls, the pilot and passenger will be spaced further apart than is the case with its prototype. The fuselage will be of oval section, at least for some part of its length.

I was beginning to wonder why I hadn't heard anything of late of Frank Champion's doings out in California, for he is usually pretty active at anything he tackles. Now I wonder no longer, for he writes me that he has been laid up for the past two months owing to an accident he sustained at the Dominguez Aerodrome. It was not in any way connected with flying, but was caused by the accidental discharge of a shot gun carried by his mechanic friend Will Gibson, one of the old Hendon fellows, when the pair were leaving the aerodrome after a spell of rabbit shooting.

The charge unfortunately entered Champion's leg at close range, and shot away about six inches of the large bone. He was hurried off to the seaside hospital at Long Beach some seven miles away, where the surgeons at first despaired of saving the limb. Although not warned of this, Champion must have had a certain presentiment, for, according to newspaper reports that I have seen, he, just before lapsing into unconsciousness under the influence of an anæsthetic, was heard to mutter something about the probable difficulty of controlling a Blériot monoplane with a wooden leg.

However, the limb has happily been saved, and to completely heal the injured member skin grafting has been applied. This gave rise to a spirit of rivalry in devotion between Mrs. Champion and Will Gibson, for they each insisted that the skin to be used in the operation, should be taken from them. Well, he is about on crutches now, and although he does not expect to be on his feet again for probably another year, we must indeed congratulate him and be thankful that amputation did not prove necessary.

He has a grim type of humour in him, has Champion, for he vows he will send me an X-ray photograph of his leg to show how much bone was shot away.

That Mr. Henry Farman has written to one of our chief London dailies urging them to use their influence in popularising Esperanto, reminds me of an incident that occurred at one of our English flying grounds last summer. A lady arrived with a parcel containing an Esperanto flag, and enquired of me which was Mr. Farman's shed, as she wished to erect the flag above it as a mark of recognition of that well-known pilot-constructor's interest in the cause. Unfortunately, Mr. Farman was not the occupant of a hangar there, but, as there were plenty of machines of his construction on the ground, I recommended her to spend two guineas and take a passenger flight on one. A friend of mine completed the deal, and before long, with her Esperanto flag round her shoulders, she was sailing merrily round the aerodrome. She left the grounds on very good terms with herself, feeling that she had done her duty towards her cause and its connection with aviation. At any rate, the aviation industry was two guineas the richer.

Sad indeed was the accident sustained by one of the seamen, Fred Pullen, assisting in the Naval aviation operations at Eastchurch. To injuries received through coming into contact with a revolving propeller, he succumbed, and at the inquest which followed a verdict of "Accidental death" was expressed. Those who saw the accident say that he appeared to have forgotten the proximity of the



The Warren safety helmet.

propeller and walked on to it as he was going to remove the chucks from the wheels. Whether he did this, or whether he meant to pass close to it and by accident, slipped and fell on to the propeller, can never be known. It was with the Short triple-propeller twin-engined biplane that the accident occurred.

Piloted by Marcel Goffin, the all-metal Tubavion monoplane, an interesting newcomer at the last Paris Aero Show, has just completed its official tests in flight at the Champagne aerodrome. It is equipped with a 70-h.p. Labor-Aviation motor.

Features in the interesting programme of meetings that Grahame-White has drawn up to take place at Hendon during the coming year are competitions arranged solely for aviatresses. Thus the English public will have the opportunity, not only of seeing our English lady pilots at work, but in all probability a French baroness or two.

It seems rather a pity that, just as the military and naval authorities are waking up to the importance of aircraft as engines of offence and defence, and that business is seriously about to commence, that the Aeronautical Syndicate, Ltd., should decide to close down their business. However, such is the case, and the selling of all their stock by auction at Hendon, on the 24th of April, should prove a good opportunity for those desirous of obtaining machines, motors, and materials for aeroplane building. Their fleet of machines, including the Gnome-Viking and Gnome-Valkyrie, are to be disposed of, with or without engines. Of Gnome spare parts, very valuable little things, and miscellaneous accessories, all in very good condition, a very large number are to be sold.

"OISEAU BLEU."

The A.S.L. Syndicate decide to Close Down.

THE A.S.L., which has ranked high among the pioneer firms of aeroplane constructors in England, is going out of business owing to its main supporter, Mr. H. Barber, having decided to give up flying, and to the disinclination of the directors to go to the expense of equipping the kind of factory necessary to enable their firm to hold its position.

The A.S.L. was formed early in 1909, and the principal shareholders are Messrs. Battersby, Ferguson, Schmettau, and Ridley-Prentice. Nearly thirty machines have been constructed, all of which had flown, and one of which was the first British monoplane to carry passengers, a record which was held for nearly a year; and a great many long-distance cross-country passenger flights have been accomplished. A flying school, and also a school of aeronautical engineering has been maintained. The work of the Company has been distinguished for the soundness and excellence of constructional details, and the staff of mechanics has certainly ranked amongst the best in the country.

Easter Monday at Brooklands.

THE flying attraction at Brooklands is a handicap race over a cross-country course of ten miles. The following are the entries for this event, which is timed to start at 5.30 p.m. :—

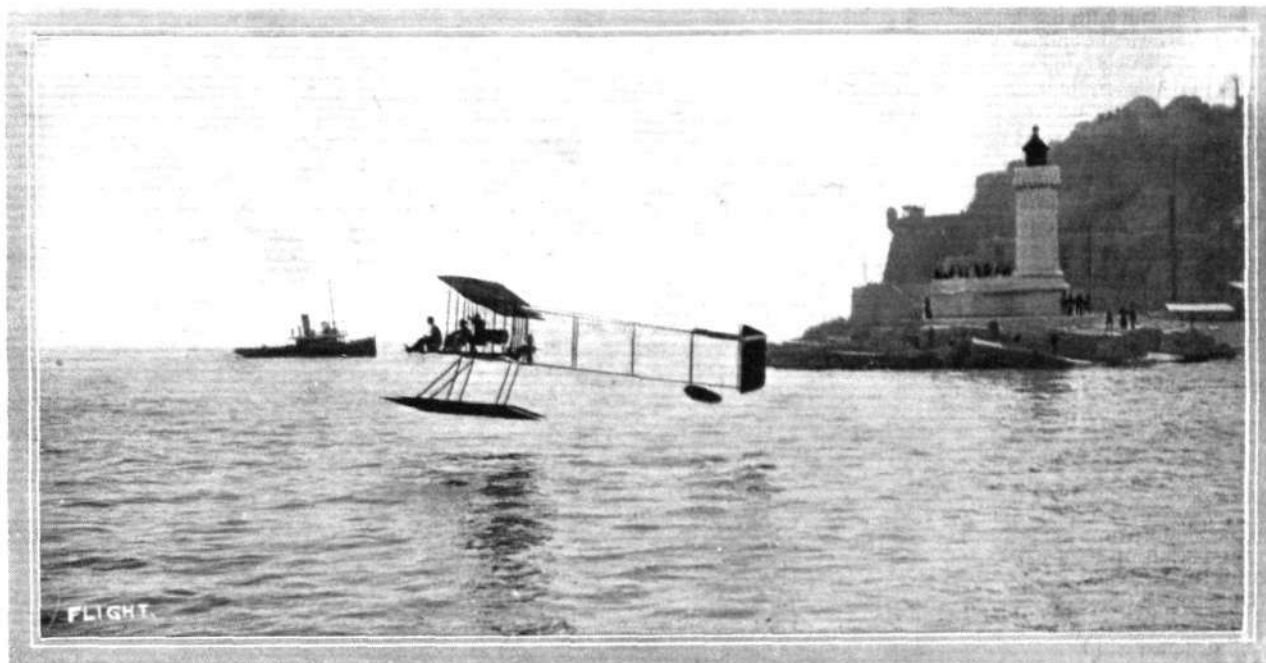
The First Aeroplane Handicap Race.

		Engine.
J. Valentine ...	Bristol monoplane ...	50-h.p. Gnome
C. H. Pixton ...	Bristol monoplane ...	50-h.p. Gnome
Herbert Spencer ...	Spencer biplane ...	50-h.p. Gnome
N. F. Percival ...	Percival biplane ...	60-h.p. E.N.V.
Lieut. J. C. Porte, R.N.	Deperdussin monoplane ...	35-h.p. Anzani
W. B. R. Moorhouse	Blériot monoplane ...	50-h.p. Gnome
E. H. Flanders ...	Flanders biplane ...	60-h.p. Green
T. O. M. Sopwith ...	Blériot monoplane ...	70-h.p. Gnome
T. O. M. Sopwith ...	Burgess-Wright biplane ...	50-h.p. Gnome
A. V. Roe ...	Roe biplane ...	60-h.p. E.N.V.
Messrs. H. B. Hewlett and Blondeau ...	Farman biplane ...	50-h.p. Gnome

THE MONACO HYDRO-AEROPLANE COMPETITION.

VERY successful was the hydro-aeroplane competition at Monaco, and it has proved a sweeping victory for Farman machines, as Fischer, on the Henry Farman biplane, who, as noted in our last issue, had secured a substantial lead during the first

with 28 points, Fischer being second, and Paulhan third. Robinson was again the first out on the following day, after which Mr. Henry Farman and Fischer were out on the former's machine, with Mr. G. Holt Thomas, who holds the rights of the British Empire in the



Fischer, with two passengers, on the Henry Farman hydro-aeroplane at Monaco. It is one of these very successful machines which has been acquired on behalf of the British Government.

days, maintained it right through, although he was very nearly caught up by Renaux on the Maurice Farman machine. Details of the first two days were given in our last issue, and on the 26th ult., Robinson started the day's work by taking the Curtiss Triad to a height of 700 metres. He was followed by Caudron on his biplane, and then the others brought out their machines to make the various tests. Renaux provided a special turn by circling round the Cunarder "Caronia," and on the day's work he led

Henry and Maurice Farman machines. Fischer took three passengers on the Henry Farman machine, accommodating one behind him and one on each float, while Renaux carried four passengers including M. Emile Dubonnet. Rugere on the Voisin-Canard made five tests, and scored second place of the day, with 12.25 points against Renaux's 13 points. The Voisin machine, however, seemed doomed to disaster, and in making one test the machine came down suddenly, breaking the floats, lower planes, and



THE WINNING HYDRO-AEROPLANE AT MONACO.—Fischer on the Farman machine with his three passengers, two of whom travel on the forward floats.

propellers. Rugère and his colleague Colliex were thrown into the water, but escaped with a ducking. The Sanchez Besa machine piloted by Benoit did well on the 28th, and scored 9 points, sharing the third place with Paulhan. Renaux made three tests, carrying four passengers, and so scored rather heavily, while Fischer made all six tests, and carried three passengers each time. On the 29th, Renaux, Fischer and Paulhan, Caudron, Robinson and Benoit each made four tests, but Renaux scored most marks as he carried four passengers. Fischer with three passengers taking the next place. Benoit again put up a very fine performance, but was too far behind to catch up the leaders. Splendid weather prevailed on Saturday last, when Paulhan made the first flight of the day with a passenger, and Fischer followed him with M. Archdeacon and a heavy load of ballast. Renaux further improved on his passenger-carrying exploits, and succeeded in getting his Maurice Farman machine in the air with six persons on board. A mishap befell Benoit who had been doing so well. Apparently one of the floats of his Sanchez Besa machine caught a piece of wreckage of some sort and caused the machine to turn turtle. The pilot was picked up by a motor boat, little the worse for his adventure, and his machine was towed into the harbour. Renaux again led on the day's returns, with Fischer a good second and Paulhan third. On Sunday, the last day, there was a large crowd of spectators, and there was no difficulty in finding passengers. Henry Farman carried M. Blériot for a trip on his machine, while Renaux and Paulhan and Fischer each took up notable people. In the day's results Fischer was the leader, with Renaux second, and on the full results being made known it was

found that Fischer had won with a good lead, with Renaux second and Paulhan third. The final results were:—

		Motor.	Marks.
Fischer ...	Henry Farman biplane ...	Gnome ...	112.1
Renaux ...	Maurice Farman biplane...	Renault ...	100.8
Paulhan ...	Curtiss biplane ...	Curtiss...	86.3
Robinson ...	" ...	" ...	71.9
Caudron ...	Caudron biplane ...	Anzani ...	63
Benoit ...	Sanchez Besa biplane ...	Salmson Unne	50.3
Rugère ...	Voisin biplane ...	—	41.75

The problem of rising from and alighting on the water has certainly been solved to a considerable extent, and not merely the question of coming to rest on smooth water. The tests included rising from the Port of Monaco and alighting in the Bay of Hercules, between Monaco and Cap Martin, and on the second day of the trials the sea was very distinctly "choppy."

Another test included flying from Monaco and alighting on the shore between Monte Carlo and Mentone with a passenger, the conditions being that neither pilot nor passenger should get their feet wet. All these tests were satisfactorily carried out.

The competition aroused a great deal of attention in France and Europe generally, and a number of foreign Governments had representatives present. Captain Godfrey Paine, R.N., who watched the tests, arranged with Mr. Holt Thomas that Lieut. Longmore, one of the naval pilots from Eastchurch, should have prolonged flights on the Farman machines, and he was the passenger during the official tests of alighting both on the sea and on the beach.

Ae.C.F. GRAND PRIX D'AVIATION.

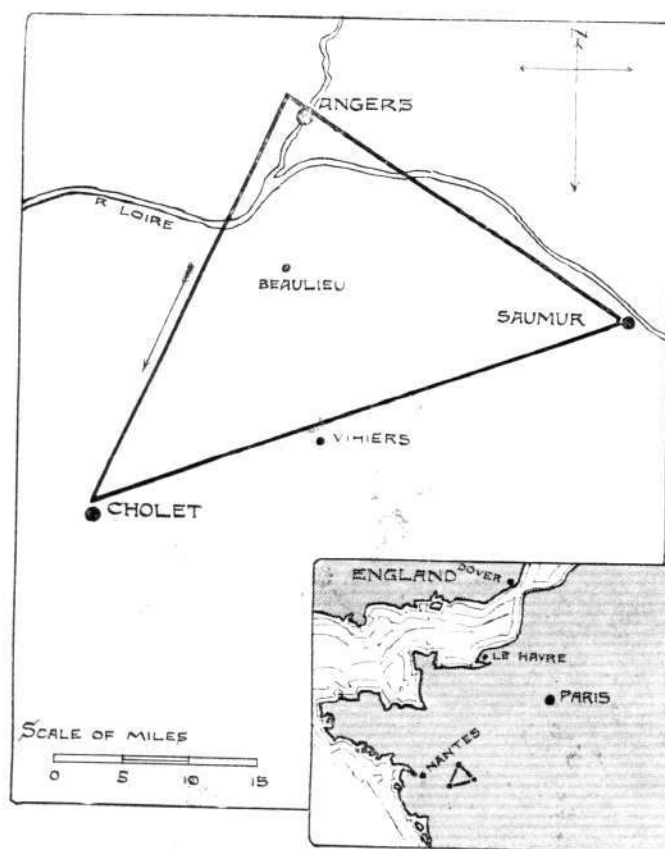
THE full regulations governing this event, which is being organised by the Aero Club of France to take place over a cross-country circuit with Angers, Cholet, and Saumur as the turning points on June 16th and 17th, have now been published, and we summarise them below.

The full distance will be about 1,100 kiloms., made up of seven rounds of the course, shown in the accompanying sketch map, three circuits having to be made on the first day and four on the second. The event is confined to machines entirely constructed in France, and the only limitation is that the cylinder capacity of the motor must not exceed twelve litres. No other fuel than petrol may be employed, and nothing may be mixed with it. Only those machines which complete the three circuits on the first day will be eligible to start on the second day, and the winner will be the machine which makes the best time over the full course of seven circuits. The time of the first round each day will be taken from the time the pilot is given the signal to go until he crosses the line at Angers. Each round there will be a compulsory stop at Angers, which must not exceed thirty minutes, or if it does the time of starting the next round will be taken as from thirty minutes after the previous landing. With this exception, the time of the next circuit will be taken from the moment the machine crosses the line at Angers in full flight to the time at which it arrives back. Machines carrying passengers weighing not less than 75 kilogs. each will have their time reduced one-sixth for each passenger. Should the passenger be less than 75 kilogs. in weight, the balance may be made up by ballast, but this will have to be in sealed bags and the passengers and ballast will have to be weighed before and after each round.

On each day the start will be given at 9 o'clock for the first machine, the others following at two-minute intervals. The starting order on the first day will be fixed by ballot, while on the second day it will be according to the finish on the previous evening. Flying will cease each evening at 7.30. On each day one stop must be made at Cholet and one at Saumur, in the special aerodromes appointed. These stops must not exceed a quarter of an hour, and will not be deducted from the flying time. When not stopping at Cholet or Saumur, the machines must pass the indicating pylones on the left hand, otherwise they will be disqualified, and they must also pass at a reasonable height.

Various parts of the competing aeroplanes will be sealed, and these must not be changed during the contest. The machines will be indicated by numbers at least one metre high, painted above and below the horizontal surfaces. The pilots must be named fifteen days before the event, and they must not be changed afterwards without special authorisation from the *Commissaires Sportifs*. The entry fee has been fixed at 2,000 francs, of which 500 francs will be returned to each machine crossing the line, and 1,000 francs for each one that covers one circuit. Competitors must insure each machine for 100,000 francs against third party risks. The number of competitors is limited to 35, and should there be more than this they will be eliminated in the following manner: One machine will be taken of each manufacturer, and then, if more are required, one each

of the remainder, and so on until the limit is reached. The entry fees of any machines eliminated in this way will be returned. Eight days before the start the hangars at the Avrille Aerodrome, near Angers, will be ready for the pilots, so that they may have some



Sketch map of the Course for the Ae.C. France Aviation Grand Prix.

practice, and the machines must be in place not later than three days before the event. At the time of sealing, the entrants must deliver a written declaration from the maker of the motor, giving its number and cylinder capacity. The race will not be held if there are less than ten entries.

FOREIGN AVIATION NEWS.

The Gordon-Bennett Race.

THE Aero Club of America has now decided that the next competition for the Gordon-Bennett Aviation Trophy shall be held on September 9th next in the neighbourhood of Chicago.

Buc to Verdun in 2 hours 45 minutes.

LIEUT. DE MARNIES and Lieut. Nicaud, each accompanied by a sapper, on their Maurice Farman machines, flew from Buc to Verdun on the 29th ult., taking 2 hours 45 mins. for the trip.

Hour and a Half on a Sommer Monoplane.

AT the Sommer military school at Mourmelon, on Saturday, Lieut. Morel was flying a monoplane for the first time, and made a flight of an hour and a half at a height of 300 metres.

Prince de Nissole Flying Again.

TRYING for a superior certificate, Prince de Nissole, on the 27th ult., flew from Etampes to Beaugency and back. Both going and returning he was much troubled by the wind, and took 2 hrs. 20 mins. for the journey of 150 kiloms.

Good Flights on a Caudron.

AT Crotoy on the 27th ult., Guillaux made a flight of over an hour on a Caudron-Anzani at a height of 800 metres. He made a similar flight later in the day although he was not quite so high.

At the Voisin Military School.

THERE are signs of renewed activity at the Voisin military school at Chalons, and on the 27th ult., Grasset made a two hours' flight, finishing with a *vol plané* from a height of 500 metres. Also de Carrière, Boisseau, and Seyrat each made a flight of over one hour.

Four on a Savary Biplane.

TAKING three companions Frantz, on the 27th ult., flew from Chartres to Orleans on a Savary biplane in three-quarters of an hour, this being claimed as a record.

Cross-Country Flying by Farman Pupils.

AT the Farman school at Etampes, Brodin flew to St. Cyr-la-Rivière and Kamberos, steering over Toury and Angerville, landing at Rouvray, afterwards returning to Etampes. The next day Kamberos and Adamidis made a trip along the Saclis Valley to St. Cyr, while Brodin went to Monnerville and back.

Tests with the Tubavion.

THE Tubavion all-metal monoplane, which, it will be remembered was exhibited by MM. Ponche and Primard at the last Paris Aero Show, has been taken to Rheims, where it is undergoing its trial flights with Marcel Goffin at the wheel.

Two Machines Over Lyons.

ON the 27th ult. Tetard on the Dufour biplane and Vidart on the Deperdussin were flying over Lyons and after circling round Fourvières they returned to their Aerodrome. On the following day Vidart on the Deperdussin and Berlot on a Sommer monoplane flew to Bron to witness the spring review of the troops.

Mourmelon to Paris on a Sommer

ON his Sommer monoplane, Kimmerling on Saturday successfully made the journey from Mourmelon to Issy, although he was brought down by the wind at Lagny and had to spend an hour there before he could continue.

Villacoublay to Chartres and Back.

CONTINUING his series of cross-country trips last week, Labouret on an Astra Military biplane carried Naval-Lieutenant Pouyer from Villacoublay to Chartres and back, he making the double journey of 140 kiloms. in an hour and a half, the outward part taking fifty minutes, while the time occupied in the home-journey was ten minutes less.

Flying Round the Eiffel Tower.

ON the 29th ult., Prevost, after testing a couple of two-seater Deperdussins, one of which climbed 600 metres in 5 mins. 45 secs., took Madame Leo de Gazura for a trip over Paris and circled round the Eiffel Tower. On returning to Issy, he came down by a spiral *vol plané*.

Getting Evidence at First Hand.

ON the 26th ult. Capt. Barres on his Maurice Farman machine flew over to Villacoublay from Buc in order to make some flights

before the Commission appointed by the Senate. After inspecting the various machines present, M. d'Estournelles de Constant, Chairman of the Commission, took his place on Capt. Barres's machine and flew over to Buc.

Testing a Nieuport Monoplane.

ON the 27th ult., a military commission visited the Nieuport Works in order to test the system of top trussing on these machines. The monoplane on which Helen secured the Michelin Trophy was selected for the tests, and it was loaded on top of the wings with 1,720 kilogs of sand, showing that it had a safety factor of four.

Nice to Monaco and Back in 20 Minutes.

TAKING a lady with him on his Deperdussin machine on Sunday, Laurens flew over from the California Aerodrome at Nice to Monaco, and after circling above the hydro-aeroplanes, returned to his headquarters, the return trip only taking 21 minutes.

The Ornithoptere Competition.

WE understand that the prizes offered by M. de la Hault, to which we referred in our last issue, for ornithoptere models are issued through his other paper, *l'Aviation Industrielle et Commerciale*, not the *Aero Mecanique*. The rules can be had from Mr. A. Bracke, Casteau, Belgium.

Blériot on a Farman Hydro-Aeroplane.

IT will be remembered that some little time ago M. Louis Blériot took Mr. Henry Farman for a trip on one of his monoplanes and last week, the latter was able to return the compliment. On the announcement of the results of the hydro-aeroplane competition, Mr. Henry Farman invited M. Blériot to accompany him for a short spin. The invitation was readily accepted and on his return M. Blériot said that he was delighted with the stability of the Farman biplane. It may be recalled that one of M. Blériot's first experimental machines, of the biplane type, was tested over the waters of the Seine.

General Roques Successor.

VERY shortly General Roques will be retiring from the office of Inspector-General of Aeronautics in the French Army, and considerable discussion is being aroused in places where aviators congregate as to who will be his successor. The general opinion seems to be in favour of Col. Hirschauer, who commands the "Sapeurs Aerostiers" at Versailles, who will attain the rank of General at the end of this year.

Brussels to Madrid in One Day.

EVERY day in the flying world things which yesterday were thought to be impossible are accomplished and Vedrines now comes forward with a proposal to fly from Brussels to Madrid in one day. Of course it is part of his scheme to rouse his fellow countrymen to a full sense of the importance of aviation.

M. Deutsch Orders an Aerial Yacht.

ALTHOUGH he has not so far made any great use of his aerial limousine, M. Deutsch (de la Meurthe), no doubt inspired by the success of the hydro-aeroplanes at Monaco, has decided to order one of these machines, capable of accommodating several persons and able to arise from and alight on the water.

Honour for Dirigible Engineer.

AT the Clement-Bayard works last week, before the staff and workmen, M. A. Clement, in the name of the Republic, presented the insignia of a Chevalier of the Legion of Honour to M. Sabathie who has won fame for his work in connection with the building of the Clement-Bayard dirigibles.

From Villacoublay to Chalons.

ON the 29th ult. three machines built by the Astra Company successfully made the journey from Villacoublay to Chalons. Two were Train monoplanes, one piloted by Train and the other by De Rome while a third machine was an Astra biplane piloted by Labouret accompanied by a passenger. The Astra machine made the journey of 180 kiloms. in 1 hour 55 mins. On the following day Labouret took his machine over to Rheims for inspection by the military authorities.

New Maurice Farman Superior Pilots.

ON the 28th ult., at Buc, Lieuts. Vaudein and Vitra made their third qualifying flights for superior military certificates on Maurice Farman biplanes. Lieut. de Marzac his second test, and Lieut. Mauger-Devarenne his first trial. Lieut. de Bordage put up his first test on Saturday.

Some Long Flights. at Buc.

APART from the tests for superior certificates, some long flights have been seen at the Maurice Farman school at Buc during the past week. On the 28th ult. Lieut. Bordage made a trip of three hours' duration, and on the previous day Capt. Reynaud was up for an hour and a-half. On the 26th both these officers were flying for a couple of hours over the neighbourhood of Versailles.

Maurice Farman with Notable Passengers.

ON Saturday, the Duke of Westminster enjoyed a trip with Mr. Maurice Farman, at Buc; while on the 28th ult., this popular pilot took up the Comte de Paris, Comtesse de Ganay, and the Duc de Guiche. Capt. Bares carried M. Archdeacon for a jaunt on the 27th.

A Borel School at Buc.

BUC will soon have another military school, as the Borel firm are starting one. On the 26th ult., Verrept was superintending the erection of five school machines, including a two-seater with double controls.

More Blériot Military Pilots.

AFTER the upper stays of the Blériot monoplanes at Pau had been strengthened, Lieut. de Bernis, on the 26th ult., successfully made his second test for a superior certificate over the Pau-Magesey course. Sergeant Feierstein also flew to Orthez and back. He made his first flight for a military *brevet* the next day, while Lieut. de Bernis went to St. Vincent de Tyrosse and back in his third test. In making his third test on the 28th, Sergeant Feierstein got lost above the clouds, and landed at Riscle, in the Allour Valley, but in another attempt on Saturday he was successful. Lieut. Jacquet made a two-hour flight on Saturday.

Farman Machines for Greek Army.

ON Saturday, at Etampes, Gougenheim was testing the first of the half-dozen Farman machines ordered by the Greek Army. Afterwards several of the Greek officers who have been learning to fly at the school, made exhibitions before the representatives of the Embassy.

Testing the Marçay Moonen Monoplane.

ON the 27th ult. the Marçay Moonen monoplane, which has its wings pivotted so that they may be folded back, was tested at Issy and apparently gave very good results. It was piloted by Aerremans.

Lengthy Flying on Train Monoplanes.

SOME good flying was done by Derome, Cure, and Percival on Train monoplanes at Mourmelon on the 27th ult. A machine in which the wings were constructed entirely of metal, was in the air for two hours flying over a closed circuit at a good height.

At the Etampes Blériot School.

AT the Blériot military school at Etampes on the 28th ult., Lieut. La Morlaye made three flights each of an hour and a half's duration, and Capt. Francezon passed the third test for a superior *brevet* over a course to Beaugency and back. The next day Lieut. Bellemois made a 125-kilom. trip to Blois *en route* to Poitiers.

Fatal Accidents in Germany.

ON the 26th ult., at Dusseldorf, Klein fell from a height of 300 feet, and died from his injuries on the way to the hospital. On the following day, Rost met with a fatal accident at Heide, close to Harburg, in Hanover.

AERONAUTICAL SOCIETY OF GREAT BRITAIN.

OFFICIAL NOTICES AS SUPPLIED BY THE SECRETARY.

Annual General Meeting.—At the annual general meeting, held on Wednesday, March 27th, the following were elected to fill the vacancies in the Council:—Colonel J. E. Capper, C.B., R.E., Captain A. D. Carden, R.E., T. W. K. Clarke, J. W. Dunne, Lieut. R. Gregory, R.N., J. H. Ledebour, F. K. McClean, and Major-General R. M. Ruck.

Meetings.—The fifth meeting of the present session will be held at the Royal Society of Arts, John Street, Adelphi, on Monday, April 15th, at 8.30 p.m., when Mr. T. W. K. Clarke will read a paper on "Aeroplane stability, with a description of a new gyroscopic apparatus" (which will be shown in action).

The sixth meeting of the present session will be held at the Royal United Service Institution, Whitehall, on Monday, April 29th, at 8.30 p.m., when Captain C. H. Ley will read a paper on "Aerial Topography."

Meetings of an informal nature will be held at the Society's offices, 11, Adam Street, Adelphi, on Mondays, from 5 p.m.

The next informal meeting will be held on Monday, April 22nd, when the subject for discussion will be the "Atmospherical Conditions at Hendon Aerodrome."

Committee of Enquiry.—The Committee of Enquiry, which was appointed on March 31st, 1911, to report and advise on the Society's position, has now handed over to the funds of the Society a balance of £12 13s. 6d. When entering upon its duties it appealed for subscriptions from the members, in order that its work might be carried out without expense to the Society as a whole. As a result of this appeal the sum of £27 16s. 6d. was received (which will be acknowledged in detail in the April issue of the *Aeronautical Journal*). The expenses incurred were £15 3s., which left a balance as aforesaid, and this balance has now been placed to the Society's general account.

T. O'B. HUBBARD,
Secretary.

THE KITE AND MODEL AEROPLANE ASSOCIATION.

OFFICIAL NOTICES.

Council Meeting.—A meeting of the council was held on the 28th (at the offices of the Aeronautical Society by kind permission), when there were present Mr. G. P. Bragg-Smith (in the Chair), Mr. C. R. Fairey, Mr. T. O'B. Hubbard, Mr. V. E. Johnson, Mr. E. W. Twining and Mr. W. H. Akehurst, Hon. Sec.

Rules.—The rules for models as drawn up by the Rules Committee were confirmed, and it was decided to go to press within a fortnight.

Dates of Trials and Competitions.—The following dates have been fixed subject to one or two alterations:—

April 13th, trials, Parkside, Sudbury; 20th, presentation and concert, Park Royal.

May 11th, trials; 18th, amateur, off ground; 25th, kite competition for Baden-Powell shield.

June 1st, *Gamage* cup, distance; 8th, Model Engineer duration cup; 15th, trials; 22nd, junior duration; 29th, tractor single propeller, off ground.

July 6th, steering; 13th, trials; 18th, altitude, evening meeting, St. Quintin's Park; 20th, kite contest, Wimbledon; 27th, Wakefield gold cup.

August 3rd, trials; 10th, hydro-aeroplane contest for Royal Aero Club prize; 17th, Association's challenge cup for distance and stability; 24th, junior distance; 31st, hydro-aeroplane (4 oz.).

September 7th, power driven (petrol, steam, &c.); 14th, kite contest (best use to which a kite can be applied); 28th, scouts' contests.

October 12th, trials. The dates and nature of laboratory competitions were not decided, and were referred back to Rules Committee.

Affiliation of Clubs.—The secretary having reported that several clubs had written asking for details of privileges, he was instructed to give in the official notices in FLIGHT.

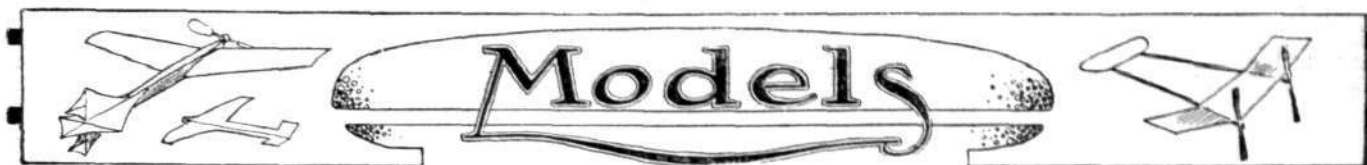
Privileges of Affiliated Clubs.—Their members are entitled: 1. To half entrance fee to all competitions; 2. To reduced fees for registration of model performances; 3. To attend meetings held by the association; 4. To introduce guests to the association's meetings and discussions other than those of a business character.

Presentation to Major B. Baden-Powell, Kite and Model Display, Tea and Concert.—This will take place on Saturday, April 20th, at Plumes Hotel and Grounds, Park Royal. Display by kite section, 2 o'clock; model display, 3 o'clock; tea, 6 o'clock; concert and presentation, 7 o'clock.

Members and friends wishing to attend should inform the hon. sec. at once, and enclose the postal orders for teas required (price 9d. per head), so that arrangements can be made. Also gentlemen and ladies who would like to assist in the concert should forward their names.

It is hoped that all interested will endeavour to turn up on this day. Lieut.-Col. Trollope will take chair (if back in this country in time), supported by the Vice-Presidents and patrons.

W. H. AKEHURST, Hon. Sec.



Conducted by V. E. JOHNSON, M.A.

The Trykle Record Model.

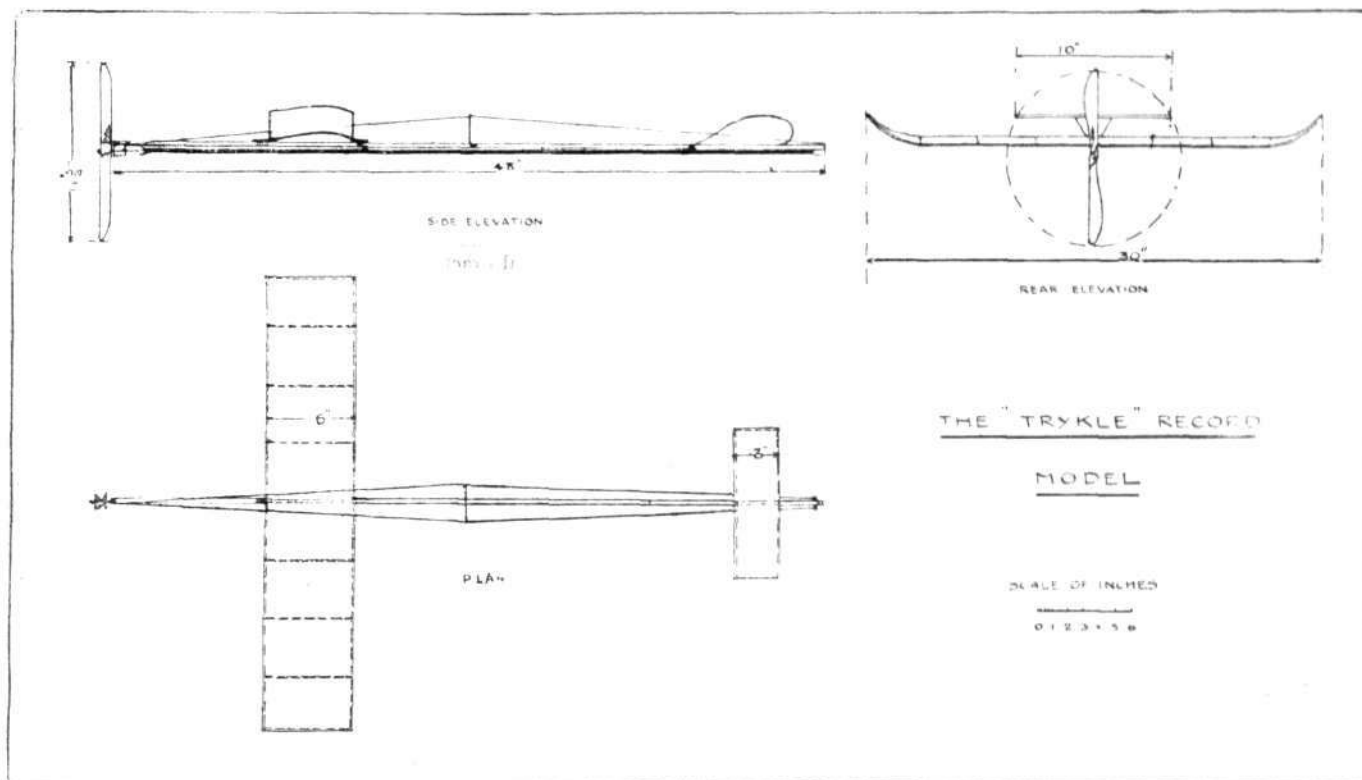
WE publish this week scale drawings and particulars of this much-discussed model, kindly supplied us by the designer.

The length of the model is 4 ft., main plane 30 ins. by 6 ins., with upturned tips for lateral stability; elevator 10 ins. by 3 ins. The last named is mounted on a clock spring $\frac{1}{4}$ in. in width in such a manner that the elevator is 2 ins. higher than the stick as per sketch. Both are fastened by rubber bands in order that either main plane or elevator, or both, can be adjusted with respect to the central stick until the best positions are found. The main plane has a camber of $\frac{3}{8}$ in. and the elevator of $\frac{3}{16}$ in. The single propeller is carved out of the solid, $1\frac{1}{4}$ ins. by $\frac{5}{8}$ in., diameter $11\frac{1}{2}$ ins. The model is constructed entirely of bamboo covered with jap silk (varnished), and should only weigh 3 ozs. without rubber. The rubber motor consists of seven strands of $\frac{1}{16}$ in., this bringing the total weight up to about 4½ ozs.

Inter-Club Contests.

Mr. B. J. Kirchener (Hon. Sec. the Ealing and District Aero Club) writes as follows with respect to the above: "The idea put

earlier one has prizes attached to it of five, three, and one guineas respectively, and the later one three, two, and one pounds. The minimum weight for the former is 8 ozs., and for the latter 4 ozs. In both cases the models have to show their capabilities not only to rise from the water and fly, but also as to how far they can alight successfully once again on the surface of the water at the end of the flight. Supposing that they alight on land and not on water, then additional short free flights must be made in order to make them do so. August is some way off yet, but we should earnestly advise all who have not as yet made any experiments in this direction to begin at once. There are bound to be plenty of competitors under the circumstances, and the task is no easy one as those who have tried know only too well. An immense sheet of water, such as a lake or a large reservoir, is not needed for a commencement. The family bath, or even a common or garden wash tub has quite sufficient expanse for a series of flotation experiments. We purpose dealing with some of the technical details of the subject and relating some of our personal experiences in the matter in a few weeks' time; in the meantime we would most strongly suggest that everyone interested should make some experiments on their own account. Do not rely



forward with regard to inter-club contests (FLIGHT, March 9th) is one which ought to receive the support of all clubs in the country. I certainly think that inter-club contests stimulate the energies of members of clubs to uphold the club's honour, while competitions tend to create a rivalry, not always having beneficial results, between members; I would like to suggest, however, that leagues be formed in different districts, in the same way as football leagues, so that clubs would not have to travel far. The question of expense and also the time which travelling about the country would entail is a great drawback to the national movement. But, nevertheless, as Mr. W. E. Evans has suggested, leagues could be formed in certain districts. The champions of these leagues might then make endeavours to meet each other, and by this means a national champion club could be formed.

Model Hydro-Aeroplane Competitions.

Amongst the numerous competitions arranged for this season by the Kite and Model Aeroplane Association (full details of which will shortly be published), are two for the above as referred to in last week's issue. Both are arranged to take place during August. The

too much on theory, but try the thing practically, the results are almost certain to both interest and surprise you. Our first experiment was completely successful as a submarine, and we know of more than one who has met with a similar result. In addition to the money prizes certificates will also be awarded.

Some Experiments on Pendulum Stability.

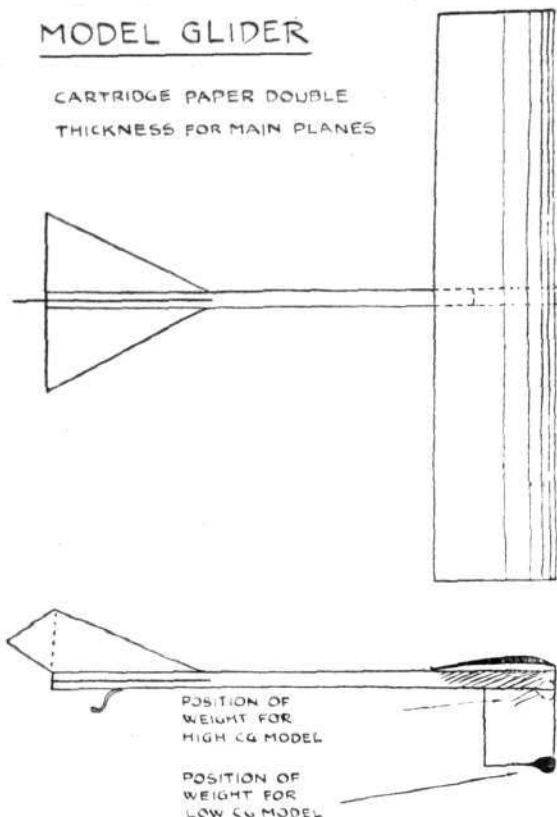
Mr. B. H. Longstaffe sends us the following account of some interesting model experiments relative to the above.

The apparatus used consisted of two Blériot-type gliders constructed of strong cartridge paper and identical both in weight and design. As shown by means of the accompanying sketch the centres of gravity could be altered on both models.

The experiments were conducted as follows:—Both gliders were first adjusted to a gliding angle of approximately one in nine in the still air of a large room and then taken into a field.

A fairly gusty wind was blowing at the time and it needed a little practice in launching before satisfactory glides were obtained. The models were hand-launched at a height of about 20 ft., and the best results were obtained with the wind. The observations made were as follows:—

(a) *Longitudinal Stability*.—In the low centre of gravity model this stability was nil; it was with great difficulty that I obtained respectable glides at all, head and tail dives were the usual results. Longitudinal stability in the high centre of gravity model was fairly



good; though the flights were anything but straight the model invariably kept on an even keel.

Knowing how misleading experimental results can be, I reversed the conditions of the centres of gravity on the two models; this change did not affect the results obtained at all.

(b) *Lateral Stability*.—When disturbed by a gust in a lateral direction the low centre of gravity model developed violent pendulum oscillations which up to a certain point (depending on the form of the disturbing gust) did not affect the flight at all, but beyond that point completely upset the glide. Imagining these conditions on a full-size machine, this critical point would hardly be reached on a present-day machine, but the pendulum oscillation would be there and would, beside giving the pilot an uncomfortable time, strain the framework to an enormous degree. Lateral stability on the high centre of gravity model was by no means satisfactory, but it lacked the pronounced sluggishness noticed in the low centre of gravity one.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

Notes regarding Clubs must reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.

MODEL CLUBS.

Aero-Models Assoc. (N. Branch) (Sec., MALCOLM B. ROSS 15, HIGHGATE AVENUE, N.).

ON 25th, O. W. Root, at Finchley, covered 400 yards at good altitude, M. B. Ross 210 yards with his $\frac{1}{2}$ -oz. model. On 27th, Ross' best, 371 yards; Roots, 200 yards. On Saturday, R. G. Corder's old model climbed to 150 ft. before coming round into the wind and doing a measured flight of 372 yards before colliding with tree. Corder did 32 and 31 secs. Owing to Easter holidays the match with Palmer's Green Ae.C. arranged for April 6th has been postponed until April 13th. On April 6th, open duration competition at Finchley 10.30 a.m.

Birmingham Model Aero Club (Secs., R. COBHAM, G. H. WOOD, 8, FREDERICK ROAD, EDGBASTON).

THE silver medal offered at the Coventry Exhibition was won by one of the club members, Mr. G. Wilde.

Nine members of the club have now made the qualifying flight of 40 secs. for the team, which will be selected this week-end, for the contest at Coventry.

Saturday a gale, but Mr. W. V. Jones, with a model rigged up from some old planes, &c., in the shed, made some fine flights of 30 secs. Next day, Mr. G. Wilde, flying one of Mr. Trykle's models,

The sluggishness, if present in a full-sized machine, would show itself also in the controls, a most disastrous condition of affairs.

Circular Flights.—Circular flights were obtained by means of the vertical rudders; both left-handed and right-handed circles were tried, and any differences in the results rectified. While circling the low centre of gravity model oscillated violently from side to side, giving the appearance of going round in jerks; these jerks were very violent for small circles. While the high centre of gravity model was circling a tendency to dive was noted; this was probably due to the lift of the main plane being affected by the circling. Exactly what it was due to I shall determine by means of another set of experiments.

Replies in Brief.

W. E. MAINE.—There is no difference between a tractor-propeller and any other save of position. Try one of Bonn's Centrale or Chauvière, with which we have recently been obtaining such good results, as stated in FLIGHT. Diameter—same as you are now using. We presume your h.p. is an estimated one, possibly you are not getting anything like the h.p. you think—also your motor—single cylinder is not, of course, so efficient as a twin or multiple cylinder one. You do not state the actual thrust. This should be at least one-quarter total inclusive weight of model. You cannot construct an efficient propeller from a rough sketch and a few hints, especially for a 3-h.p. motor.

F. COOPER.—It is designed to lift a model weighing from 3 to 4 lbs. inclusive, i.e., the weight of the plant is such that in order to construct a model of sufficient size to carry it, the total weight (steam plant and aeroplane) will have a minimum weight of 3 lbs., and up to 4 lbs. at any rate is allowable. The model we are building for it is designed to weigh 20 to 24 ozs. The plant is not on the market, nor can we say when or if it will be, although a plant of this type is, we should think, certain to be on the market before long. It is very questionable, however, if it can ever be made a cheap plant. Experiments are being conducted with a similar type of plant designed for smaller models, probably about the weight you mention (8 ozs.), but some little time must elapse before the results are known. From the experiments and the results which have been obtained with the larger type, we see no reason why the smaller should not be proportionately successful.

F. H. H.—There is no hard and fast rule, considerable divergence exists in actual practice. A fairly general practice is to take the span one-third and the chord from one-third to nearly one-half. See also FLIGHT, December 16th, 1911.

E. HURLSTON.—Am glad to know matters are not as I thought, shall be pleased to receive report. Am afraid cannot go further into the matter just now.

B. J. KIRCHENER.—Many thanks for your letter and P.S. I will write you *re* the latter in a few days.

Reply to Query.

HERBERT YOUNG, referring to Mr. F. Weidmann's query *re* power-driven model, writes:—"I suggest a Davis twin petrol engine, as described in FLIGHT recently, 1-h.p. [we thought it was 1.6-h.p.]. Diameter of propeller, 20 ins. The length of my model is 7 ft. 6 ins.; span, 8 ft. Should advise Antoinette type of model from FLIGHT drawings."

made flights of 58 secs., Mr. Trykle himself only obtaining 39½ secs. Mr. Wood, with a twin, 47 secs. Mr. W. Lunn 35 secs., and Mr. V. L. Thompson 40½ secs., both with Trykle-type models.

Blackheath Aero Club (Hon. Sec., A. E. WOOLLARD, 48, HAFTON ROAD, CATFORD, S.E.).

AT Kidbrook last week-end Mr. Bailey's 6½-oz. model repeatedly flew long distances, Mr. Brown's Fearless biplane obtained duration of 26 secs. Others flying were Mr. Clark's 5-oz. Victor, Mr. Egelstaff's single propeller'd mono, and Mr. Woollard a single stick machine.

At Blackheath, Mr. A. B. Clark flew his "floating tail" biplane, also his 2½ and 5 oz. Victor machine.

At Lee, Mr. Bailey obtained a duration of 42 secs. Mr. A. B. Clark flew his "ABC 42," Mr. Packham an A frame, and Mr. Dodd a single stick mono. Mr. Whitworth had a 1 (main)-1-P-O machine which flew very well.

Flying at Lee next week-end, only impromptu meetings will be held owing to the large number of members who will be visiting Hendon.

Cardiff Aero Club (114, MISKIN STREET, CATHAYS).

OWING to the situation in South Wales regarding the coal strike, the exhibition arranged for April 17th has been postponed until October 16th.

During the week some short flights have been made by A. F. David, F. Crouch, W. Weeks, and W. Griesbach.

By sending up the club kite many new members have been secured. In the evenings it is sent up with a lamp attached. This can be seen all over the town, and many interested people have come from far and near to see it hauled in. We have a quarter of a mile of line for it. On Good Friday (weather permitting) kite contest in Cathays Park.

New members elected were P. Swan, J. Williams, G. Griesbach. P. Swan exhibited a tractor screw, rise-from-ground model.

Coventry Aeroplane Building Society (Sec., J. W. SCHOFIELD, 22, KINGSTON ROAD, EARLSDON).

THE Exhibition in the Corn Exchange proved most interesting and successful. The Mayor of Coventry (Col. W. F. Wyley) opened the Exhibition. Mr. W. A. Weaver, president of the Society, offered an apology on behalf of Rear-Admiral Bacon, who had been unavoidably called away on other business. A very excellent display of models was arranged. Mr. H. M. Carter's magnificent petrol-driven Blériot-type created a lot of interest; this model is a fine specimen of workmanship, even to the minutest detail. Mr. J. W. Schofield showed two petrol-driven models, the one a prize winner at Birmingham Aero Club three years ago, and the other an original design, four-cylinder biplane, twin-propeller, passenger-carrying type. There was a fine display of materials for the making of models, &c., sent by Mr. E. Melcombe, including propellers, small bicycle wheels; also by Overton and King, makers of the O K long-distance flyers and O K propellers. Much interest was shown in two fine Humber engines of 30 and 45-h.p., a full-sized Cody biplane dissembled in various parts of the hall, and the propellers of Mr. Weaver's ornothoptere, and two finely-made Humber propellers. Other members, Messrs. R. A. Rice, E. Cobb, A. Lawrence, A. Clarke, A. Havelock, A. Austin and L. G. Ryley showed some excellent flying models; Mr. J. Lewis exhibited a rather novel direct-lift machine. The club 1st prize for scale model was awarded to A. Austin, and the 2nd prize to L. G. Ryley. The silver medal presented by Mr. Weaver was awarded to Mr. Wall, of Birmingham. A fine selection of record-breakers by Mr. E. Trykle were very much admired. Mr. Trykle at times during the day demonstrated the gliding capabilities of his machine from the gallery. Mr. S. Shorter showed a round dozen of well-made racing models, most of which are capable of doing long flights. Splendid attendance of the public, at least 1,400 tickets being taken at the doors. Much credit is due to Mr. T. E. Morton, chairman of sub-committee, for the arrangements for the exhibition which has proved such a success.

Dover and District Model Aero Club (Sec., H. D. DAVIS, "OAKVILLE," GODWYNE ROAD, DOVER).

COMPETITIONS for Easter Monday (weather permitting): 1. Best biplane flight; 2. Altitude and *vol plané* made by a tractor model; 3. Off-the-ground model; 4. Stability and control; 5. Altitude and *vol plané* (any type); 6. Best single-screw flyer and best all-round construction. The judges will be on the ground (Northfall meadow) at 2.45 p.m. The prizes are to be presented at 7.30 p.m. on Saturday, April 13th, at "Oakville," Godwyne Road, Dover.

Ealing and District Aero Club (Sec., B. J. KIRCHNER, 1, QUEEN'S GARDENS, EALING, W.).

ON Saturday, G. Beeching, D. Butler and L. Kirchner were flying their models at Perivale, with good results.

At Park Royal, Mr. Houlberg with his 0-1-1-2P model obtained well over a quarter mile, after a high flight of 52 secs. After this, flights of 62½, 64½, 62 and 64½ secs. were made. Mr. Houlberg several times beat club record for duration—45 secs., held by Mr. L. Roche—with 64½ secs., officially timed and observed by Messrs. C. Davies, M. A. Reed and B. J. Kirchner.

Subscriptions for spring quarter became due April 1st. To-day (Saturday) flying ceases at present Perivale ground, owing to closing for hay. The "Hundred Acre" field, Greenford, will be used for the first time next Saturday. Members wishing to enter for certificates, can obtain conditions from the secretary, on receipt of stamped envelope. Flying at 2.30 p.m. on Saturday and Monday (Bank Holiday), at Greenford. Members uncertain of the ground can call at the secretary's address at about 2 p.m., Saturday, and will be taken to field.

Hackney and District Aero Club (Sec., B. H. LONGSTAFFE, 47, JENNER ROAD, STOKE NEWINGTON, N.).

GOOD flying last Saturday by Gittas, Marmin, Field, P. Haslin, S. Lewis, and Longstaffe. Easter programme: Friday, 5th, visit to London Aerodrome, members meeting at secretary's address, 10 a.m. Saturday, 6th, model competitions on Hackney Marshes, from 2 p.m.; special prizes for duration, distance, steering and stability; illuminated flying during the evening. Monday, 8th, visit to London Aerodrome; party meets at secretary's address, 9.30 a.m. Indoor meeting at Spensley Hall, Brooke Road, Friday, 12th, at 7.30; exhibition of models, &c.; also election of officers, &c.

Paddington and Districts Aero Club (Sec., W. E. EVANS, 133, BUCHANAN GARDENS, HARLESDEN).

RESULT of Novices' Duration Competition: 1st prize, Mr. W. Jackson, 36½ secs.; 2nd, C. Dutton, 35½ secs.; 3rd, C. Levy, 35½ secs.; 4th, L. Holden, 30 secs. Also flew, Davidson, 16½ secs.; Wood, 15½ secs. M. Levy broke machine in trial, unable to compete. Other durations were: H. Hurlin, 51, 48, and 40 secs.; W. Evans, 48½, 45, and 35½ secs.; L. Holden, 31 secs.; Woolley, 30½ secs.; C. Levy, 28 secs.; and Chalfont, 26 secs. These six members qualified for duration for 2nd class certificate.

Good Friday and Saturday, certificate flying for distance. Easter Monday, point-to-point contest.

Reigate, Redhill and District Aero Club (Sec., H. V. MAY, 4, LONDON ROAD, REIGATE).

DURING the week, Messrs. Lewis, Norton, Cox, Osborne, and Wilson have been getting good flights. Sunday morning, Lewis, May, Wilson, Norton, and Morris were out at 6 a.m. experimenting with explosives fastened to machines. It was found models stood quite a heavy explosion, and retained stability.

The club's president, Col. R. H. Rawson, M.P., has presented a handsome cup for quarterly competition; also Messrs. Weston, Hurlin Co. have put up one of their Models de Luxe for a "rise-from-the-ground" competition on Easter Monday. Flying at Earlswood, Buckland, and Nutfield through the week-end, and at Whiggie, Redhill, on Easter Monday.



Photo. by J. T. Roberts.

A few enthusiasts at a Wednesday afternoon meeting of the Croydon and District Aero Club.

Scottish Ae.S. Model Aero Club (6, McLELLAN STREET, GOVAN).

At the pond in Queen's Park, last Saturday, the first official competition for hydro-aeroplanes took place. The water was somewhat choppy. Mr. Balden started well, but after a few trials the model capsized, and the salvage operations were decidedly amusing at times. Mr. Arthur then got going, and his model made the best show of the day. Starting away at a terrific speed, it rose easily, and after doing some automatic-stability feats in the air, alighted gracefully on the water. On one occasion this model rose in about 6 feet, flew right over the pond, and landed in among the palings of the footpath on the other side. Mr. Arthur then made some successful trials against the wind. Mr. Donaldson made some very good attempts. Mr. Arthur advises the use of big planes, his own ratio being, machine length, 33 ins.; main plane span, 27 ins.; elevator, about 10 ins. by 2½ ins. Another meeting of this kind to-day (Saturday), at Whiteinch Park, at 3 p.m. Members are kindly requested not to bring ordinary fliers, small models and tractors excepted, as complication will ensue if models get mixed up in shrubs and flower beds. On Monday the spring holiday meeting at the Aerodrome, Barrhead.

Meeting of members in the Institute, Elmbank Crescent, April 15th, at 8 p.m., to discuss the work of the coming few months.

Sheffield Model Aero Club (Hon. Sec. C. F. W. CUDWORTH, 35, PENRHYN ROAD, SHEFFIELD).

ON March 28th, Mr. A. V. Kavanagh presided at meeting. Mr. E. W. Colver has given 10s. towards a cup, the following being the specifications passed:—1. That the cup be competed for by those models rising off the ground under their own power; 2. Flying the greatest distance; 3. Flights of less than 70 yards not to be counted; 4. Flights not to be less than 6 ft. high; 5. That the machines must be model aeroplanes, and not darts or flying sticks; 6. The cup to be for club members only; 7. That besides, a silver aviation medal be given to the member winning the cup each time competed for, and that he shall hold the cup for six months, which after that time be competed for again; 8. The member winning the cup three times in succession, then the cup shall become the property of the winner, when it will be replaced by another one.

Weather permitting, the competition on Easter Monday will be held in field lent by Mr. B. Roberts, Marsh Farm, High Lane, Ecclesall (opposite The Bungalow), at 2.30 prompt. Look out for the Union Jack, the following being events and prizes. Members of the club only. 1. Longest time in the air, timed by stop watch (three attempts): 1st prize, solid silver aviation medal; 2nd, ivory pocket knife, presented by Mr. W. Blake. 2. Race over 50 yards (one attempt), flown in two heats and final: 1st prize, bronze aviation medal; 2nd, one 6-in. carved wood propeller, presented by Mr. H. Slack. 3. Longest time in the air, timed by stop watch (three attempts): 1st prize, bronze pendant aviation medal; 2nd, one pair 7-in. carved wood propellers, presented by Mr. H. Slack. This event being for those members who have not already won a prize. The cup will be on view at the competition, but will not be competed for until Whit Monday for first time.

Stony Stratford and District Kite and Model Aero Club (Hon. Sec., O. HAMILTON, JUN., OLD STRATFORD).

AT general meeting on March 28th the following programme was arranged:—1. Distance and best straight flight, members only; 2. Duration, members only; 3. Flying and stability for kites, members only; 4. Best straight flight, for junior members only; 5. Open event for juniors (all under 16) who are not members of the club, flying and stability competition for kites. Last day for receiving entries, first post Saturday, April 6th. In all classes a prize value 2s. 6d. is guaranteed, and additional prizes will be offered if a sufficient number of entries are received.

Worcester Model Aero Club (Sec., S. A. SEARS, VICTORIA INSTITUTE, WORCESTER).

Six models out Saturday. On Easter Monday prizes for efficiency, distance, and duration. Competition commences 3 o'clock. Competitors must use machines of their own construction only. Non-members will be allowed to compete by paying small entrance fee. Meeting also on Thursday evening in Easter week at 6.30. Next meeting 6th April on Pitchcroft at 3 o'clock.

Yorkshire Ae.C. (Model Section) (5A, HULLAND ST., LEEDS).

ON March 26th, Mr. A. C. Hunt, of Leeds, gave a most interesting lecture on "Scale Models and Flying Sticks." The lecturer severely condemned the sets of stick, rag and rubber, wrongly called model aeroplanes. He then spoke upon the scientific side of model construction, proving to the members that something more interesting and beneficial may be obtained from this branch of aviation other than what they have up to the present found. Mr. Hunt has many novel ideas in mind for the advancement of the club's work, and developments are expected. Meet to-day, at 3 o'clock, on Woodhouse Moor.

CORRESPONDENCE.

Correspondents communicating with regard to letters which have appeared in FLIGHT, would much facilitate ready reference by quoting the number of each letter.

Flight Terminology.

[1522] As the nomenclature of aviation is still in an unsettled condition it may not be too late to make the following suggestions:—

1. That the biplanes now variously called "Avro-type," "Breguet-type," "engine-in-front-type," &c., should be called "fuselage" biplanes.

2. That the biplanes on which the tail and forward elevator (if any) are carried on "outriggers," usually called "engine-behind-type," should be called "outrigger" biplanes.

3. That the name "aquaplane" should be substituted for "hydro-aeroplane," now commonly used for aircraft capable of alighting on the water.

Vincent Square.

C. NICHOLSON.

Who was the First Man to Fly?

[1523] In connection with this question, the Danish Ellehammer deserves mention. It is claimed for him that in 1905 he flew in an aeroplane of his own design at Lindholmen, and that on September 12th, 1906, he made the first recognised free flight. That is some six weeks before Santos Dumont. The Wrights seem first to have fitted a motor in 1905. If the Ellehammer claims be correct, though obviously inferior to the Wrights in importance, he seems to deserve a place in the sun.

FRED T. JANE.

(Other Correspondence held over.)

PUBLICATIONS RECEIVED.

Catalogues.

Sturtevant Aeronautical Motors. The B. F. Sturtevant Co., Hyde Park, Mass., U.S.A.

Jahrbuch der Luftfahrt, 1912. By A. Vorreiter. Munchen: J. F. Lehmann. Price 12 marks.

Aeronautical Patents Published.

Published April 4th, 1912.

- 6,153. E. VON BERND. Propelling- and supporting-surfaces for flying-machines.
- 6,303. A. M. MCINTOSH. Aeroplane.
- 6,846. J. ANDERSON. Feathering wind-sails or propellers for airships.
- 6,999. J. G. A. KITCHEN AND I. H. STOREY. Flying-machines and hydro-planes.
- 7,247. H. E. EVANS. Aeroplanes, hydroplanes and kites.
- 7,595. H. T. ALESBURY. Aeroplane.
- 10,301. W. A. HUTSON. Aerodromes.

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